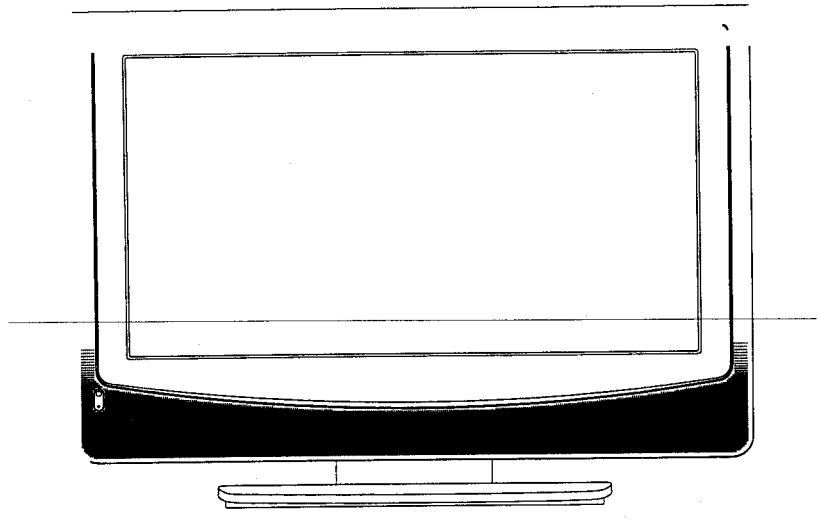
# SERVICE MANUAL

# ORION

## TV-2322 SI

### 23" LCD COLOR TELEVISION



**ORIGINAL**
**CHASSIS CODE A**

Best. Nr. SM2322

Design and specifications are subject to change without notice.

# SERVICING NOTICES ON CHECKING

### 1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

### 2. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

### 3. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.
Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.

### 4. BE CAREFUL WITH THE LCD PANEL

Avoid a shock to the panel while servicing. Take enough care to deal with it.

### 5. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

### 6. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

**(INSULATION CHECK PROCEDURE)**

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the eternal exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

**[Note 1]**

If you have not the 500V insulation resistance meter, use a Tester.

**[Note 2]**

External exposure metal: Antenna terminal
Earphone jack

# HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the CHASSIS CODE.)

1. MODEL NUMBER and CHASSIS CODE
   YOU can find it in the back of your unit.
2. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

# IMPORTANT

Inferior silicon grease can damage IC's and transistors.
When replacing an IC's or transistors, use only specified silicon grease (YG6260M).
Remove all old silicon before applying new silicon.

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# GENERAL SPECIFICATIONS

| | | | | | |
|---|---|---|---|---|---|
| G-1 | **TV System** | LCD | LCD Size / Visual Size | | 23.07 inch / 586.0mmV |
| | | | LCD Type | | Color TFT LCD |
| | | | Number of Pixels | | 1280(H) x 720(V) |
| | | | View Range | Left/Right | 85/85 degree |
| | | | | Up/Down | 85/85 degree |
| | | Color System | | | PAL |
| | | Speaker | | | 2 Speaker |
| | | | Position | | Front |
| | | | Size | | 1.8 x 3.9 inch |
| | | | Impedance | | 16 ohm |
| | | Sound Output | MAX | | 5W + 5W |
| | | | 10%(Typical) | | --- |
| | | NTSC3.58+4.43 /PAL60Hz | | | Yes |
| G-2 | **Tuning System** | Broadcasting System | | | CCIR System BG |
| | | Tuner and Receive CH | System | | 1Tuner |
| | | | Destination | | CCIR Hyper |
| | | | Tuning System | | F-Synth |
| | | | Input Impedance | | VHF/UHF 75 ohm |
| | | | CH Coverage | | E2~E4, X~Z+2, S1~S10, E5~E12,S11~S41,E21~E69 |
| | | Intermediate Frequency | Picture(FP) | | 38.9MHz |
| | | | Sound(FS) | | 33.4MHz |
| | | | FP-FS | | 5.5MHz |
| | | Auto Tuning Method | | | ALL Band (Not C.C.I.R. CH Plan) |
| | | Preset CH | | | 80 |
| | | Stereo/Dual TV Sound | | | Nicam/A2 Dual |
| | | Tuner Sound Muting | | | Yes |
| G-3 | **Power** | Power Source | AC | | 230V AC 50Hz |
| | | | DC | | --- |
| | | Power Consumption | | at AC | 100 W at AC 230 V 50 Hz |
| | | | | at DC | -- |
| | | | Stand by (at AC) | | 5 W at 230V 50Hz |
| | | | Per Year | | -- kWh/Year |
| | | Protector | Power Fuse | | Yes |
| G-4 | **Regulation** | | Safety | | CE(EN60065:98) |
| | | | Radiation | | CE |
| | | | X-Radiation | | --- |
| G-5 | **Temperature** | | Operation | | +5oC ~ +40oC |
| | | | Storage | | -20oC ~ +60oC |
| G-6 | **Operating Humidity** | | | | Less than 80% RH |

# GENERAL SPECIFICATIONS

| | | | | | | |
|---|---|---|---|---|---|---|
| G-7 | On Screen Display | Menu (TV) | | | | Yes |
| | | | Menu Type | | | Icon |
| | | | Picture | | | Yes |
| | | | | Brightness | | Yes |
| | | | | Contrast | | Yes |
| | | | | Color | | Yes |
| | | | | Tint (NTSC Only) | | Yes |
| | | | | Sharpness | | Yes |
| | | | | DNR ON/OFF | | Yes |
| | | | Audio | | | Yes |
| | | | | NICAM AUTO/OFF | | Yes |
| | | | | Bass | | Yes |
| | | | | Treble | | Yes |
| | | | | Balance | | Yes |
| | | | | Surround ON/OFF | | No |
| | | | Setup | | | Yes |
| | | | | Auto Tuning | | Yes |
| | | | | Manual Tuning | | Yes |
| | | | | CH Allocation | | Yes |
| | | | | BACKLIGHT | | Yes |
| | | | | Language | | Yes |
| | | | | Picture Scroll (CINEMA Mode Only) | | Yes |
| | | | | AUTO 4:3 DEFAULT | | Yes |
| | | | | AV2 Output | | Yes |
| | | | | AV2 Input | | Yes |
| | | | | AV Colour | | Yes |
| | | | Option | | | Yes |
| | | | | On Timer | | Yes |
| | | | | Off Timer | | Yes |
| | | Menu (PC) | | | | Yes |
| | | | Picture | | | Yes |
| | | | | BRIGHTNESS | | Yes |
| | | | | CONTRAST | | Yes |
| | | | | HOR POSITION | | Yes |
| | | | | VER POSITION | | Yes |
| | | | | PHASE | | Yes |
| | | | | CLOCK | | Yes |
| | | | | AUTO ADJUST | | Yes |
| | | | | RED | | Yes |
| | | | | GREEN | | Yes |
| | | | | BLUE | | Yes |
| | | | Audio | | | Yes |
| | | | | Bass | | Yes |
| | | | | Treble | | Yes |
| | | | | Balance | | Yes |
| | | | | Surround ON/OFF | | No |
| | | | Control Level | | | Yes |
| | | | | Volume | | Yes |
| | | | | Brightness | | Yes |
| | | | | Contrast | | Yes |
| | | | | Color | | Yes |
| | | | | Tint (NTSC Only) | | Yes |
| | | | | Sharpness | | Yes |
| | | | | Tuning | | Yes |
| | | | | Bass | | Yes |
| | | | | Treble | | Yes |
| | | | | Balance | | Yes |
| | | | | H Position | | Yes |
| | | | | V Position | | Yes |
| | | | | PHASE | | Yes |
| | | | | CLOCK | | Yes |
| | | | | Red | | Yes |
| | | | | Green | | Yes |
| | | | | Blue | | Yes |
| | | | | Backlight | | Yes |
| | | | Nicam ST | | | Yes |
| | | | Tone 1/2 | | | Yes |
| | | | Pin Code | | | No |
| | | | FREEZE | | | Yes |
| | | | CH/AV/PC | | | Yes |
| | | | Hotel Lock | | | No |
| | | | Wide Mode (AUTO/4:3/FULL SCREEN/16:9/CINEMA/14:9) | | | Yes |
| | | | Sleep Timer | | | Yes |
| | | | Sound Mute | | | Yes |
| G-8 | OSD Language | | | | | English French Spanish German Italian |

# GENERAL SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| G-9 | **Clock and Timer** | Sleep Timer | Max Time | 120 Min |
| | | | Step | 10 Min |
| | | On/Off Timer | Program(On Timer / Off Timer) | 1 Program |
| | | Wake Up Timer | | No |
| | | Timer Back-up (at Power Off Mode) more than | | -- Min Sec |
| G-10 | **Remote Control** | Unit | | RC-GE |
| | | Glow in Dark Remocon | | No |
| | | Format | | NEC |
| | | Custom Code | | 80-63 h |
| | | Power Source | Voltage(D.C) | 3V |
| | | | UM size x pcs | UM-4 x 2 pcs |
| | | Total Keys | | 33 Keys |
| | | Keys | Power (Stand By) | Yes |
| | | | 1 | Yes |
| | | | 2 | Yes |
| | | | 3 | Yes |
| | | | 4 | Yes |
| | | | 5 | Yes |
| | | | 6 | Yes |
| | | | 7 | Yes |
| | | | 8 | Yes |
| | | | 9 | Yes |
| | | | 0 /AV | Yes |
| | | | Volume Up / Right | Yes |
| | | | Volume Down / Left | Yes |
| | | | Sleep | Yes |
| | | | Info (CH Call ) | Yes |
| | | | Menu | Yes |
| | | | Enter | Yes |
| | | | Mute | Yes |
| | | | Freeze frame | Yes |
| | | | TEXT / MIX / TV | Yes |
| | | | Reveal / Skip | Yes |
| | | | Display Cancel | Yes |
| | | | HOLD / Status | Yes |
| | | | Red | Yes |
| | | | Green | Yes |
| | | | Yellow | Yes |
| | | | Cyan | Yes |
| | | | Normal | No |
| | | | F/T/B(Expand) / Normal | Yes |
| | | | Quick View | No |
| | | | Sub Page / Quick View | Yes |
| | | | Up/CH Up | No |
| | | | Up/CH Up / Page Up | Yes |
| | | | Down / CH Down | No |
| | | | Down / CH Down / Page Down | Yes |
| | | | Reset | No |
| | | | Audio 1/2 | No |
| | | | Reset / Audio 1/2 | Yes |
| | | | Picture Size | Yes |

# GENERAL SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| G-11 | Features | Auto Shut Off | | Yes |
| | | BBE | | No |
| | | Auto Search | | Yes |
| | | CH Allocation | | Yes |
| | | Channel Lock | | No |
| | | Just Clock Function | | No |
| | | Game Position | | No |
| | | CH Label | | No |
| | | T'Text | | Yes |
| | | | Text type | Toptext |
| | | | Text Language | English , French, Swedish, Hungarian<br>Finnish, Turkish, German, Dutch<br>Portuguese, Spanish, Italian, Greek |
| | | Wide (AUTO/4:3/FULL SCREEN/16:9/CINEMA/14:9) | | Yes |
| | | Picture Scroll | | Yes |
| | | DNR | | Yes<br>3D |
| | | Comb Filter | | Yes<br>5 Lines |
| | | Surround | | No |
| | | Backlight | | Yes |
| | | Stable Sound | | No |
| | | Choke Coil | | Yes |
| | | Auto Set Up | | No |
| | | Power ON Memory | | No |
| | | Hotel Lock | | No |
| | | PC Monitor Input | | Yes |
| | | Freeze frame | | Yes |
| G-12 | Accessories | Owner's Manual | Language | German |
| | | | w/Guarantee Card | Yes |
| | | Remote Control Unit | | Yes |
| | | Rod Antenna | | No |
| | | | Poles | - |
| | | | Terminal | - |
| | | Loop Antenna (W/ Antenna Change Plug) | | No |
| | | | Terminal | - |
| | | U/V Mixer | | No |
| | | DC Car Cord (Center+) | | No |
| | | Guarantee Card | | No |
| | | Warning Sheet | | No |
| | | Circuit Diagram | | No |
| | | Antenna Change Plug | | No |
| | | Service Facility List | | No |
| | | Important Safeguard | | No |
| | | Dew/AHC Caution Sheet | | No |
| | | Quick Set-up Sheet | | No |
| | | Battery | | Yes |
| | | | UM size x pcs | UM-4 x 2 pcs |
| | | | OEM Brand | No |
| | | AC Adapter | | No |
| | | AC Cord (for AC Adapter) | | No |
| | | AC Cord | | Yes |
| | | AV Cord (2Pin-1Pin) | | No |
| | | Registration Card | | No |
| | | 300 ohm to 75 ohm Antenna Adapter | | No |

# GENERAL SPECIFICATIONS

| | | | | | |
|---|---|---|---|---|---|
| G-13 | Interface | Switch | | Power (Tact) | Yes |
| | | | | System Select | No |
| | | | | Main Power SW | No |
| | | | | Sub Power | No |
| | | | | Channel Up/Menu Up | Yes |
| | | | | Channel Down/Menu Down | Yes |
| | | | | Volume Up/Menu > | Yes |
| | | | | Volume Down/Menu < | Yes |
| | | | | Input Select/Enter | Yes |
| | | | | Menu | Yes |
| | | | | Main Power SW | No |
| | | Indicator | | Power | No |
| | | | | Stand-by | Yes (RED) |
| | | | | On Timer | No |
| | | Terminals | Rear | Video Input 1 | No |
| | | | | Audio Input 1 | No |
| | | | | S- Input 1 | No |
| | | | | Video Output | No |
| | | | | Audio Output | No |
| | | | | Color Stream 2 | No |
| | | | | Other Terminal | No |
| | | | | Euro Scart (21Pin) | 2Scart |
| | | | | PC Monitor Input (D-Sub) | Yes |
| | | | | Audio Input | RCA x 2(Stereo) |
| | | | | Diversity | No |
| | | | | Ext Speaker | No |
| | | | | DC Jack 12V(Center +) | No |
| | | | | VHF/UHF Antenna Input | DIN Type |
| | | | | AC Inlet | Yes |
| | | | Side | Video Input 3 | RCA x 1 |
| | | | | Audio Input 3 | RCA x 2(Stereo) |
| | | | | Other Terminal | Headphone |
| G-14 | Set Size | | | Approx. W x D x H (mm) | 610 x 276 x 484 |
| | | | | w/o Stand,Handle Approx. W x D x H (mm) | 610 x 100.5 x 438.5 |
| G-15 | Weight | | | Net Approx. | 9.5kg (20.9 lbs) |
| | | | | Net w/o Stand,Handle Approx. | 8.5kg (18.7 lbs) |
| | | | | Gross Approx. | 12.5kg (27.5 lbs) |
| G-16 | Carton | Master Carton | | | No |
| | | | | Content | ---- Sets |
| | | | | Material | -- /-- |
| | | | | Dimensions W x D x H(mm) | -- x -- x -- |
| | | | | Description of Origin | No |
| | | Gift Box | | | Yes |
| | | | | Material | Double/Full Color |
| | | | | Dimensions W x D x H(mm) | 720 x 383 x 590 |
| | | | | Design | As per Buyer's |
| | | | | Description of Origin | No |
| | | Drop Test | | | Natural Dropping At 1 Corner / 3 Edges / 6 Surfaces |
| | | | | Height (cm) | 62 |
| | | Container Stuffing | | | 394 Sets/40' container |
| G-17 | Material | Cabinet | | Cabinet Front | PS 94HB |
| | | | | Cabinet Rear | PS 94HB |
| | | PCB | | Non-Halogen | No |
| | | | | Eyelet | Yes |
| G-18 | Environment | Pb Free | | Lead-free Solder | No |
| | | | | Other | No |
| | | Cd Free | | | No |

# DISASSEMBLY INSTRUCTIONS

## 1. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

### REMOVAL

1. Put Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. **(Refer to Fig. 1-1.)**

   **NOTE**

   Masking is carried out on all the parts located within 10 mm distance from IC leads.

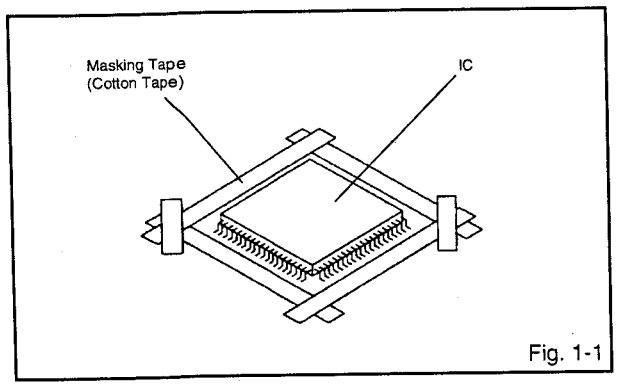


Fig. 1-1

2. Heat the IC leads using a blower type IC desoldering machine. **(Refer to Fig. 1-2.)**

   **NOTE**

   Do not rotate or move the IC back and forth , until IC can move back and forth easily after desoldering the leads completely.

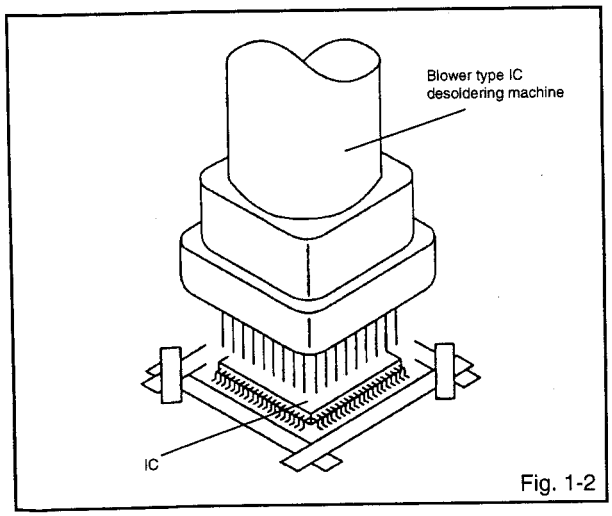


Fig. 1-2

3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using tweezers and remove the IC by moving with the IC desoldering machine. **(Refer to Fig. 1-3.)**

   **NOTE**

   Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.

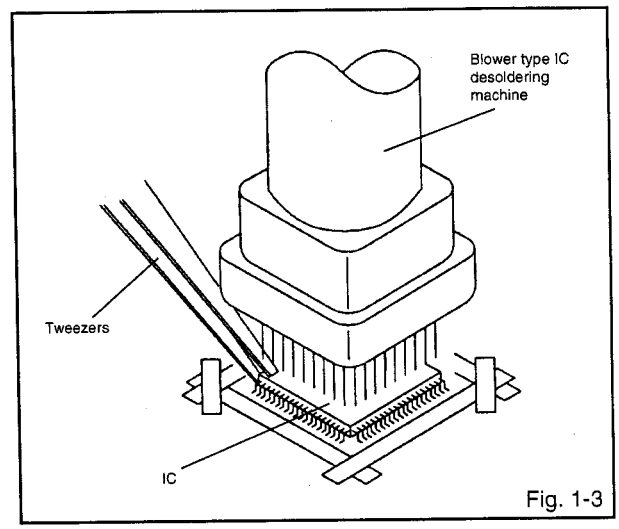


Fig. 1-3

4. Peel off the Masking Tape.

5. Absorb the solder left on the pattern using the Braided Shield Wire. **(Refer to Fig. 1-4.)**

   **NOTE**

   Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.

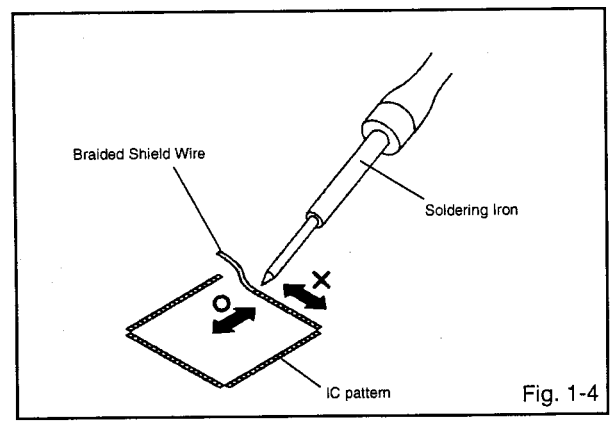


Fig. 1-4

# DISASSEMBLY INSTRUCTIONS

**INSTALLATION**

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. **(Refer to Fig. 1-5.)**

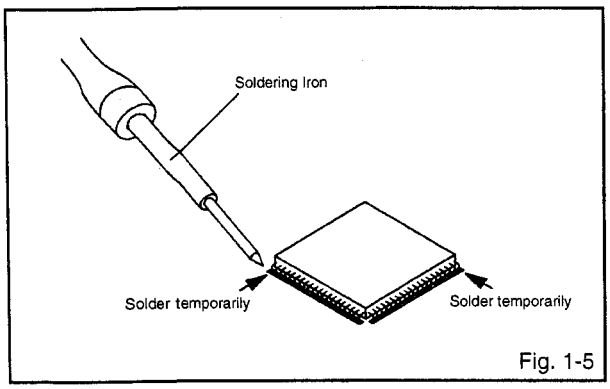


Fig. 1-5

2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. **(Refer to Fig. 1-6.)**

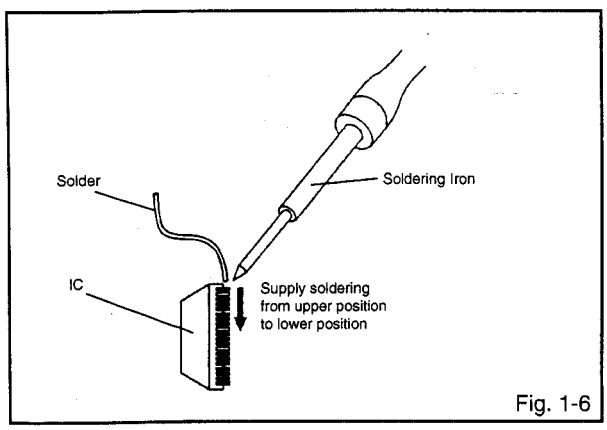


Fig. 1-6

3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 1-7.)**

**NOTE**

Do not absorb the solder to excess.

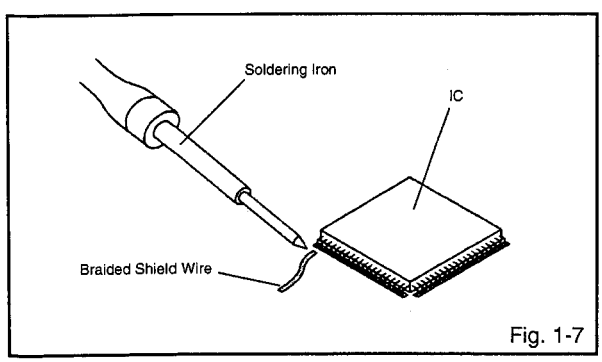


Fig. 1-7

4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 1-8.)**

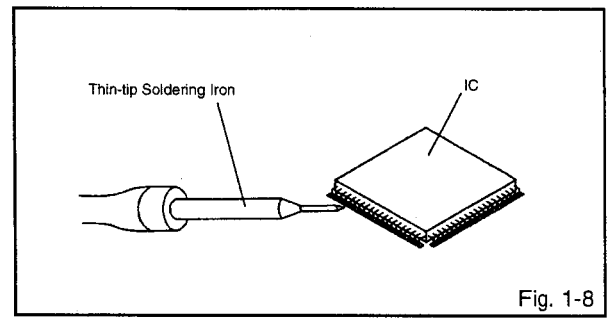


Fig. 1-8

5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass.
Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

**NOTE**

- When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, always be sure to replace the IC in this case.

# SERVICE MODE LIST

This unit is provided with the following SERVICE MODES so you can repair, examine and adjust easily.

To enter the SERVICE MODE function, press and hold both buttons simultaneously on the main unit and on the remote control for more than the standard time in the appropriate condition. (See below chart.)

| Set Condition | Set Key | Remocon Key | Standard Time | Operations |
|---|---|---|---|---|
| TV mode | VOL. DOWN (Minimum) | 0 | 2 sec. | Reset the user setting items (PICTURE, VOLUME, LANGUAGE and NICAM AUTO/OFF) to the initial state for delivery. |
| TV mode | VOL. DOWN (Minimum) | 1 | 2 sec. | Initialization of factory TV data.<br>NOTE: If you set factory initialization, the memories are reset such as the channel setting, and the POWER ON total hours. |
| TV mode | VOL. DOWN (Minimum) | 6 | 2 sec. | POWER ON total hours are displayed on the screen.<br>Refer to the "PREVENTIVE CHECKS AND SERVICE INTERVALS" (CONFIRMATION OF HOURS USED).<br><br>Can check the INITIAL DATA of MEMORY IC.<br>Refer to the "WHEN REPLACING EEPROM (MEMORY) IC". |
| ALL mode | VOL. DOWN (Minimum) | 9 | 2 sec. | Display of the Adjustment MENU on the screen.<br>Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment). |

# CONFIRMATION OF HOURS USED

POWER ON total hours can be checked on the screen. Total hours are displayed in 16 system of notation.

**NOTE: If you set a factory initialization, the total hours is reset to "0".**

1. Turn on the POWER, and set to the TV mode.
2. Set the VOLUME to minimum.
3. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 2 seconds.
4. After the confirmation of using hours, turn off the power.

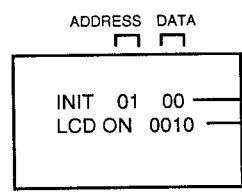



FIG. 1

Initial setting content of MEMORY IC.
POWER ON total hours.
= (16 x 16 x 16 x thousands digit value)
+ (16 x 16 x hundreds digit value)
+ (16 x tens digit value)
+ (ones digit value)

# WHEN REPLACING EEPROM (MEMORY) IC

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

**NOTE: No need to set data after position INI 2F due to the adjustment value.**

| INI | +0 | +1 | +2 | +3 | +4 | +5 | +6 | +7 | +8 | +9 | +A | +B | +C | +D | +E | +F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00 | --- | 00 | 88 | D0 | B0 | 30 | 01 | 42 | 92 | EE | F4 | 30 | 00 | 00 | 00 | 14 |
| 10 | 00 | 00 | 00 | 00 | 0A | 00 | FF | FF | FF | FF | 00 | 00 | 00 | 00 | 00 | 00 |
| 20 | 00 | 00 | 38 | 29 | 24 | 70 | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF |

**Table 1**

1. Turn on the POWER, and set to the TV mode.
2. Enter DATA SET mode by setting VOLUME to minimum.
3. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 2 seconds. ADDRESS and DATA should appear as FIG 1.

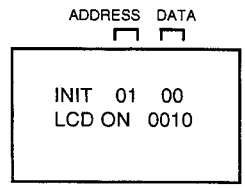



**FIG. 1**

4. ADDRESS is now selected and should "blink". Using the RIGHT/LEFT button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
5. Press ENTER to select DATA. When DATA is selected, it will "blink".
6. Again, step through the DATA using RIGHT/LEFT button until required DATA value has been selected.
7. Pressing ENTER will take you back to ADDRESS for further selection if necessary.
8. Repeat steps 4 to 7 until all data has been checked.
9. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input. **After the data input, set to the initializing of shipping.**
10. Turn on the POWER, and set to the TV mode.
11. Press both VOL. DOWN button on the set and Channel button **(1)** on the remote control for more than 2 seconds.
12. After the finishing of the initializing of shipping, the unit will turn off automatically.

The unit will now have the correct DATA for the new MEMORY IC.

# ELECTRICAL ADJUSTMENTS

## 1. ADJUSTMENT PROCEDURE

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

**CAUTION**

- Use an isolation transformer when performing any service on this chassis.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
- When you exchange IC and Transistor with a heat sink, apply silicon grease **(YG6260M)** on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damage to the IC and Transistor).

**Prepare the following measurement tools for electrical adjustments.**

1. Pattern Generator

## 2. BASIC ADJUSTMENTS

**On-Screen Display Adjustment**

1. Set the VOLUME to minimum.
2. Press the VOL. DOWN button on the set and the channel button **(9)** on the remote control for more than 2 seconds to display adjustment mode on the screen as shown in **Fig. 2-1**.

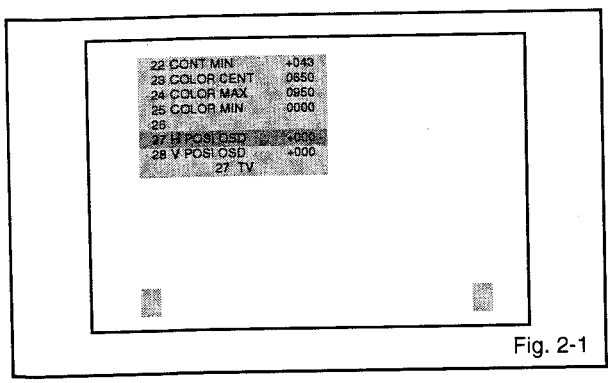



Fig. 2-1

3. Use the Channel UP/DOWN button or Channel button **(0-9)** on the remote control to select the options shown in **Fig. 2-2**.
4. Press the MENU button on the remote control to end the adjustments.
5. To display the adjustment screen for AV mode, press the AV button on the remote control to set to the AV mode. Press the VOL.DOWN button on the set and the channel **(9)** on the remote control for more than 2 seconds.

| NO. | FUNCTION | NO. | FUNCTION |
|---|---|---|---|
| 01 | R DRIVE | 22 | CONT MIN |
| 02 | R CUT OFF | 23 | COLOR CENT |
| 03 | G DRIVE | 24 | COLOR MAX |
| 04 | G CUT OFF | 25 | COLOR MIN |
| 05 | B DRIVE | 26 | --- |
| 06 | B CUT OFF | 27 | H POSI OSD |
| 07 | --- | 28 | V POSI OSD |
| 08 | H POSI 50 | 29 | H POSI TEXT |
| 09 | H POSI 60 | 30 | V POSI TEXT |
| 10 | V POSI 50 | 31 | NT COLOR CENT |
| 11 | V POSI 60 | 32 | NT COLOR MAX |
| 12 | BAK LIGHT CENT | 33 | NT COLOR MIN |
| 13 | BAK LIGHT MAX | 34 | RGB BRI CENT |
| 14 | BAK LIGHT MIN | 35 | RGB BRI MAX |
| 15 | BRIGHT CENT | 36 | RGB BRI MIN |
| 16 | BRIGHT MAX | 37 | RGB CONT CENT |
| 17 | BRIGHT MIN | 38 | RGB CONT MAX |
| 18 | TINT | 39 | RGB CONT MIN |
| 19 | --- | 40 | RGB V POSI |
| 20 | CONT CENT | 41 | RGB H POSI |
| 21 | CONT MAX | 42 | --- |

Fig. 2-2

**2-1: CONTRAST CENT**

1. Receive the PAL color bar pattern.(RF Input)
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(20)** on the remote control to select "CONT CENT".
3. Check if the step No. CONT CENT is "94".
4. Receive a broadcast and check if the picture is normal.
5. Press the AV button on the remote control to set to the AV mode. Then perform the above adjustments 1~3.

**2-2: WHITE BALANCE**

1. Place the set in Aging Test for more than 5 minutes.
2. Receive the gray scale pattern from the Pattern Generator.
3. Press the AV button on the remote control to set to the PC mode.
4. Using the remote control, set the brightness and contrast to normal position.
5. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(02)** on the remote control to select "R CUT OFF".
6. Press the CH. UP/DOWN button on the remote control to select the "R CUT OFF" or "B CUT OFF".
7. Adjust the VOL. UP/DOWN button on the remote control to whiten the R CUT OFF and B CUT OFF at each step tone sections equally.
   Perform the above adjustments 5 and 6 until the white color is looked like a white.

# ELECTRICAL ADJUSTMENTS

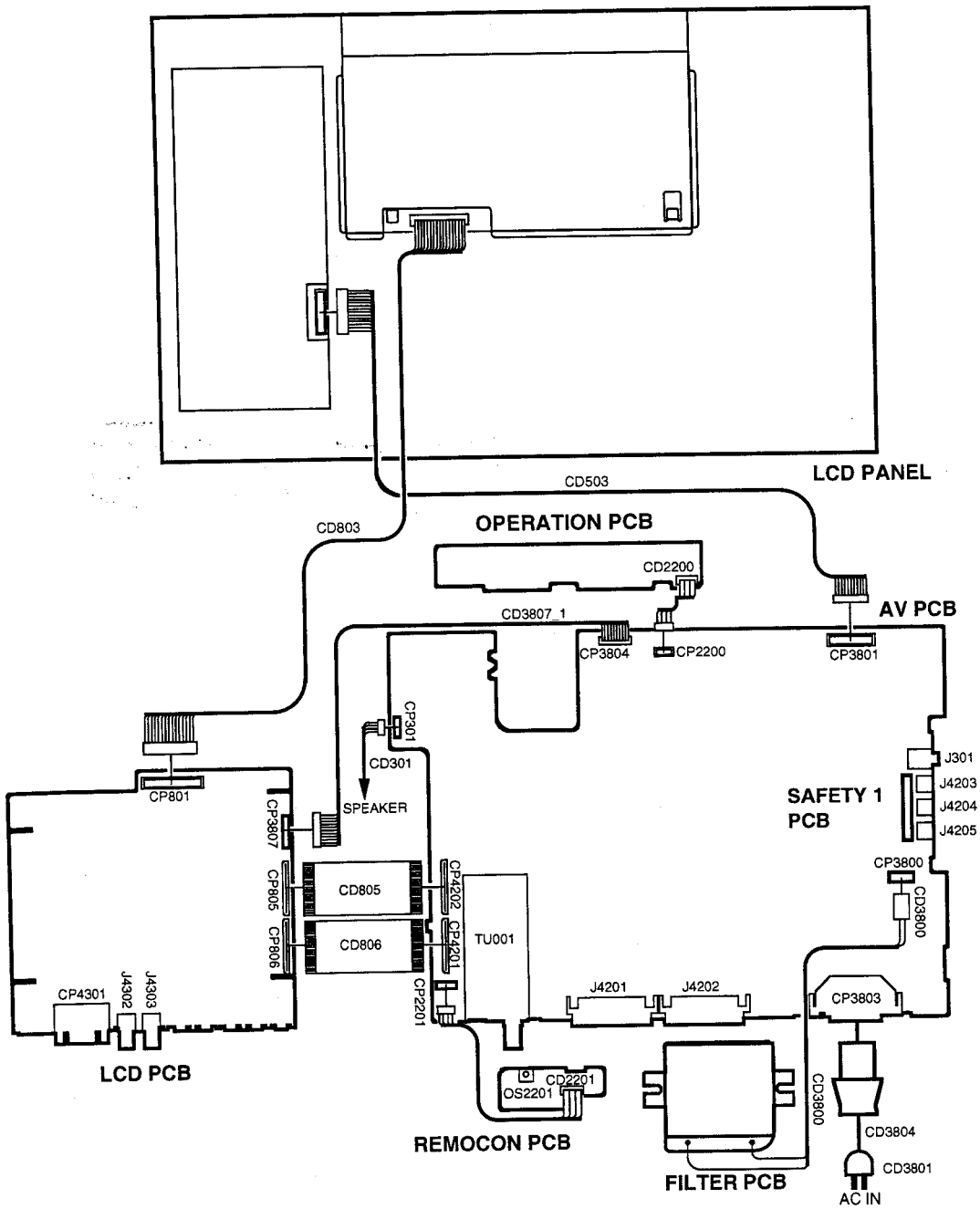
**2-3: Confirmation of Fixed Value (Step No.)**

Please check if the fixed values of each the adjustment items are set correctly referring below.**(RF/AV/PC)**

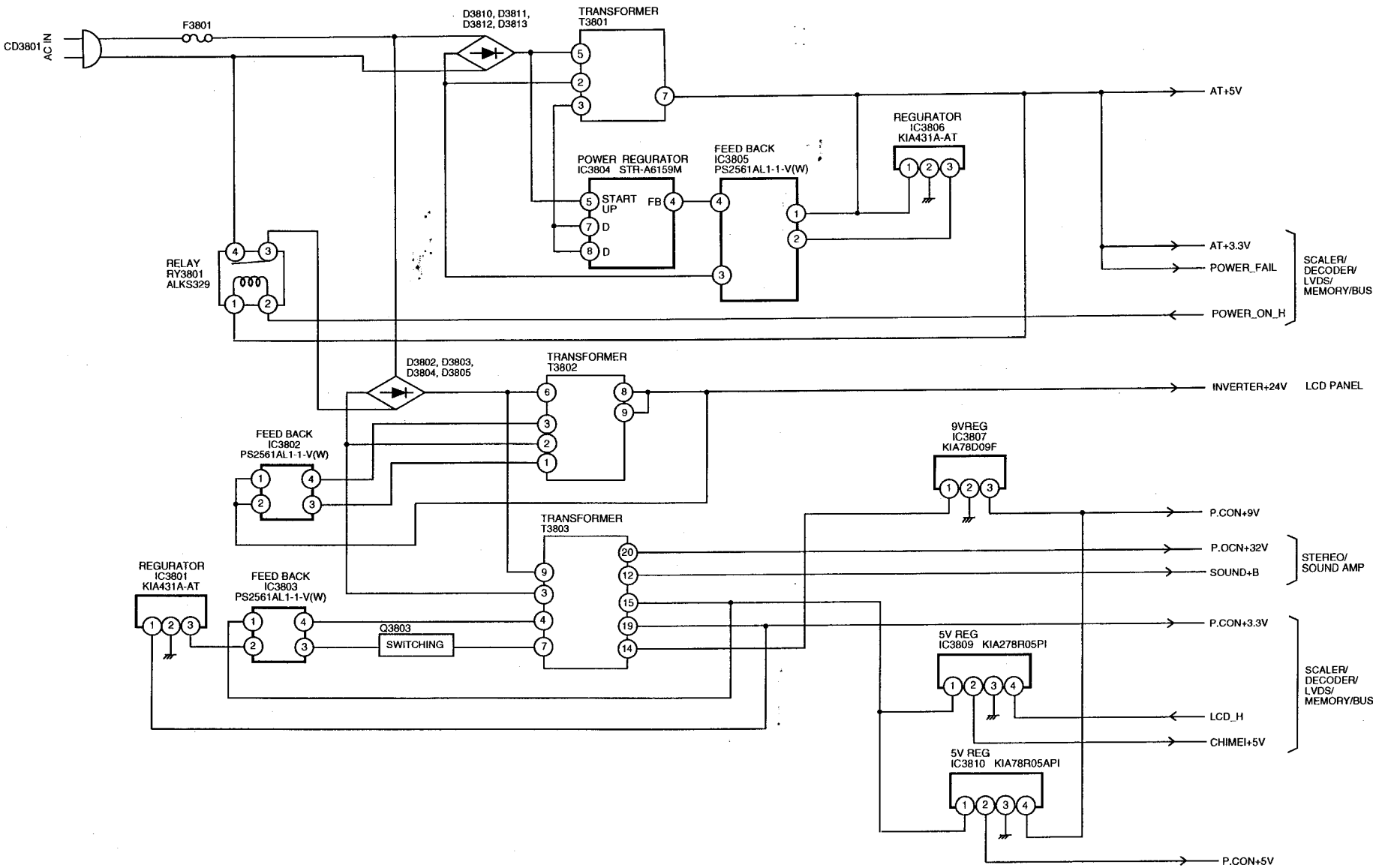
| NO. | FUNCTION | RF | AV | PC |
|---|---|---|---|---|
| 01 | R DRIVE | 564 | 564 | 604 |
| 02 | R CUT OFF | 36 | 36 | 0 |
| 03 | G DRIVE | 564 | 564 | 576 |
| 04 | G CUT OFF | 36 | 36 | 0 |
| 05 | B DRIVE | 500 | 500 | 508 |
| 06 | B CUT OFF | 0 | 0 | 0 |
| 08 | H POSI 50Hz | 4 | 4 | 4 |
| 09 | H POSI 60Hz | 2 | 2 | 2 |
| 10 | V POSI 50Hz | 2 | 2 | 2 |
| 11 | V POSI 60Hz | 3 | 3 | 3 |
| 12 | BAK LIGHT CENT | 105 | 105 | 105 |
| 13 | BAK LIGHT MAX | 215 | 215 | 215 |
| 14 | BAK LIGHT MIN | 1 | 1 | 1 |
| 15 | BRIGHT CENT | 9 | 9 | 145 |
| 16 | BRIGHT MAX | 35 | 35 | 215 |
| 17 | BRIGHT MIN | -41 | -41 | 20 |
| 18 | TINT | 0 | 0 | 0 |
| 19 | --- | | | |
| 20 | CONT CENT | 94 | 94 | 40 |
| 21 | CONT MAX | 118 | 118 | 80 |
| 22 | CONT MIN | 43 | 43 | 0 |
| 23 | COLOR CENT | 650 | 650 | 0 |
| 24 | COLOR MAX | 950 | 950 | 0 |
| 25 | COLOR MIN | 0 | 0 | 0 |
| 26 | --- | | | |
| 27 | H POSI OSD | 0 | 0 | 0 |
| 28 | V POSI OSD | 0 | 0 | 0 |
| 29 | H POSI TEXT | 80 | 80 | 80 |
| 30 | V POSI TEXT | 5 | 5 | 5 |
| 31 | NT COLOR CENT | 700 | 700 | 0 |
| 32 | NT COLOR MAX | 950 | 950 | 0 |
| 33 | NT COLOR MIN | 0 | 0 | 0 |
| 34 | RGB BRI CENT | 145 | 145 | 145 |
| 35 | RGB BRI MAX | 180 | 180 | 180 |
| 36 | RGB BRI MIN | 50 | 50 | 50 |
| 37 | RGB CONT CENT | 35 | 35 | 35 |
| 38 | RGB CONT MAX | 70 | 70 | 70 |
| 39 | RGB CONT MIN | 0 | 0 | 0 |
| 40 | RGB V POSI | 0 | 0 | 0 |
| 41 | RGB H POSI | -3 | -3 | -3 |

# ELECTRICAL ADJUSTMENTS

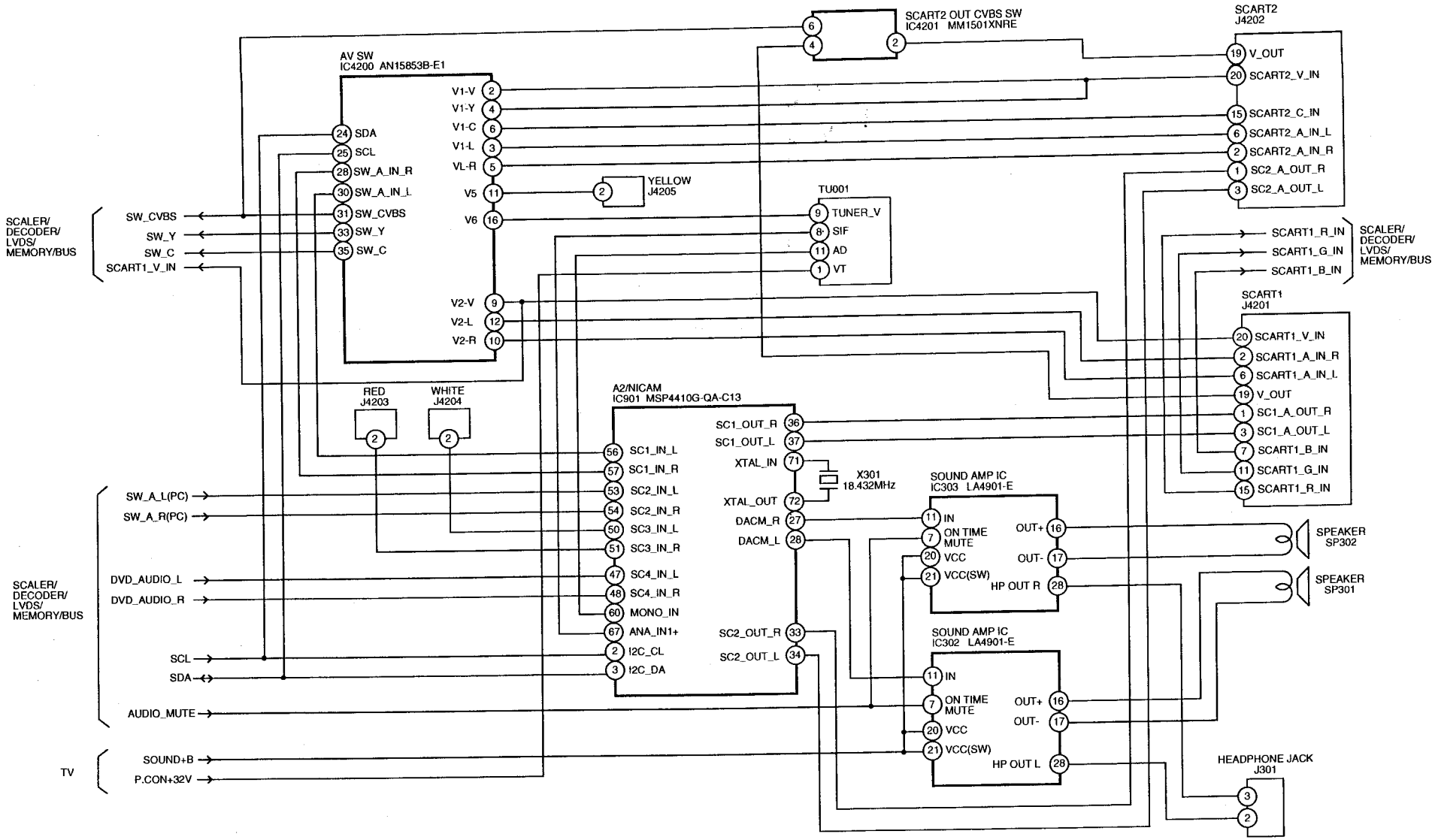
## 3. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



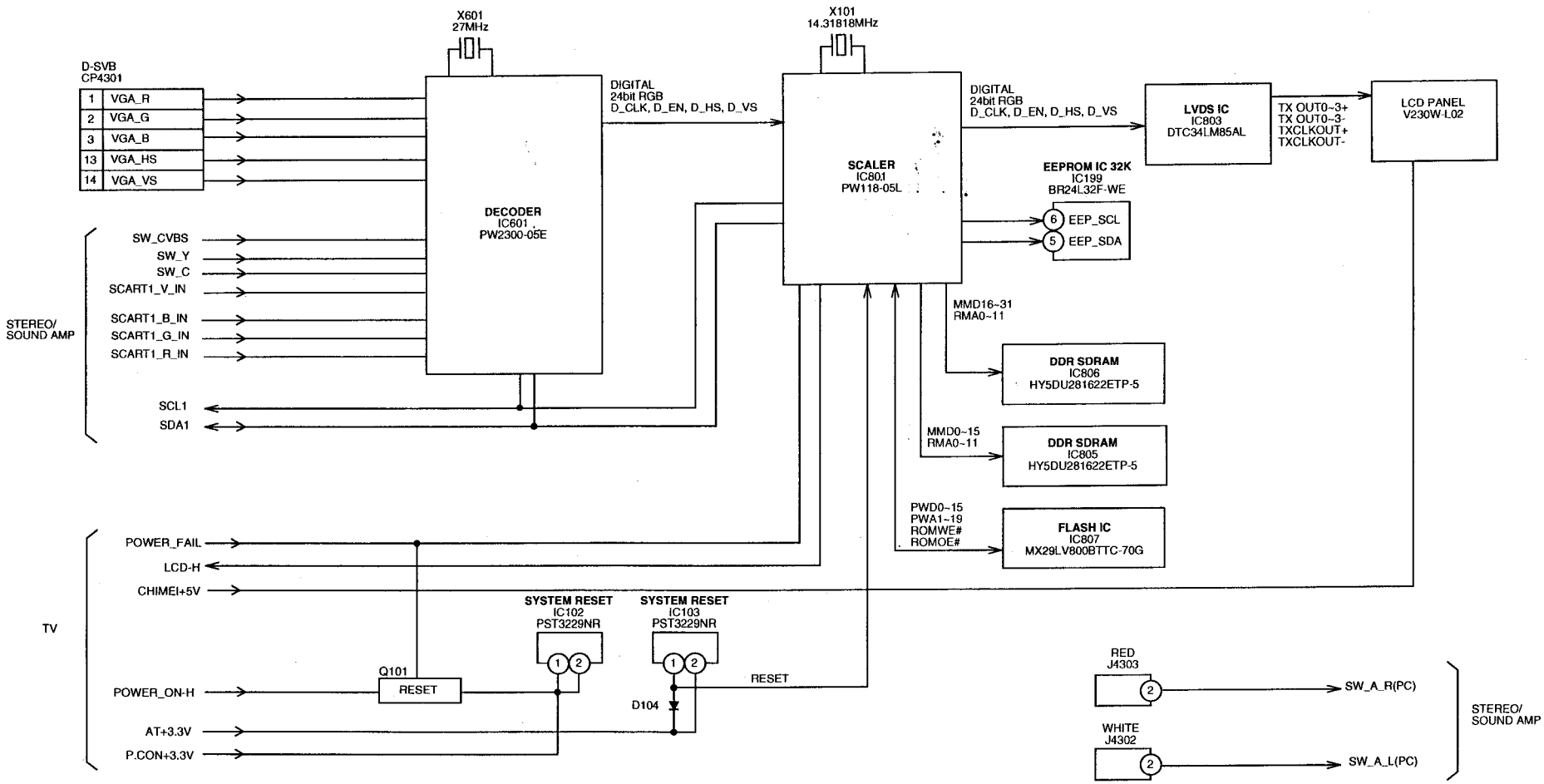
# TV BLOCK DIAGRAM



# STEREO/SOUND AMP BLOCK DIAGRAM

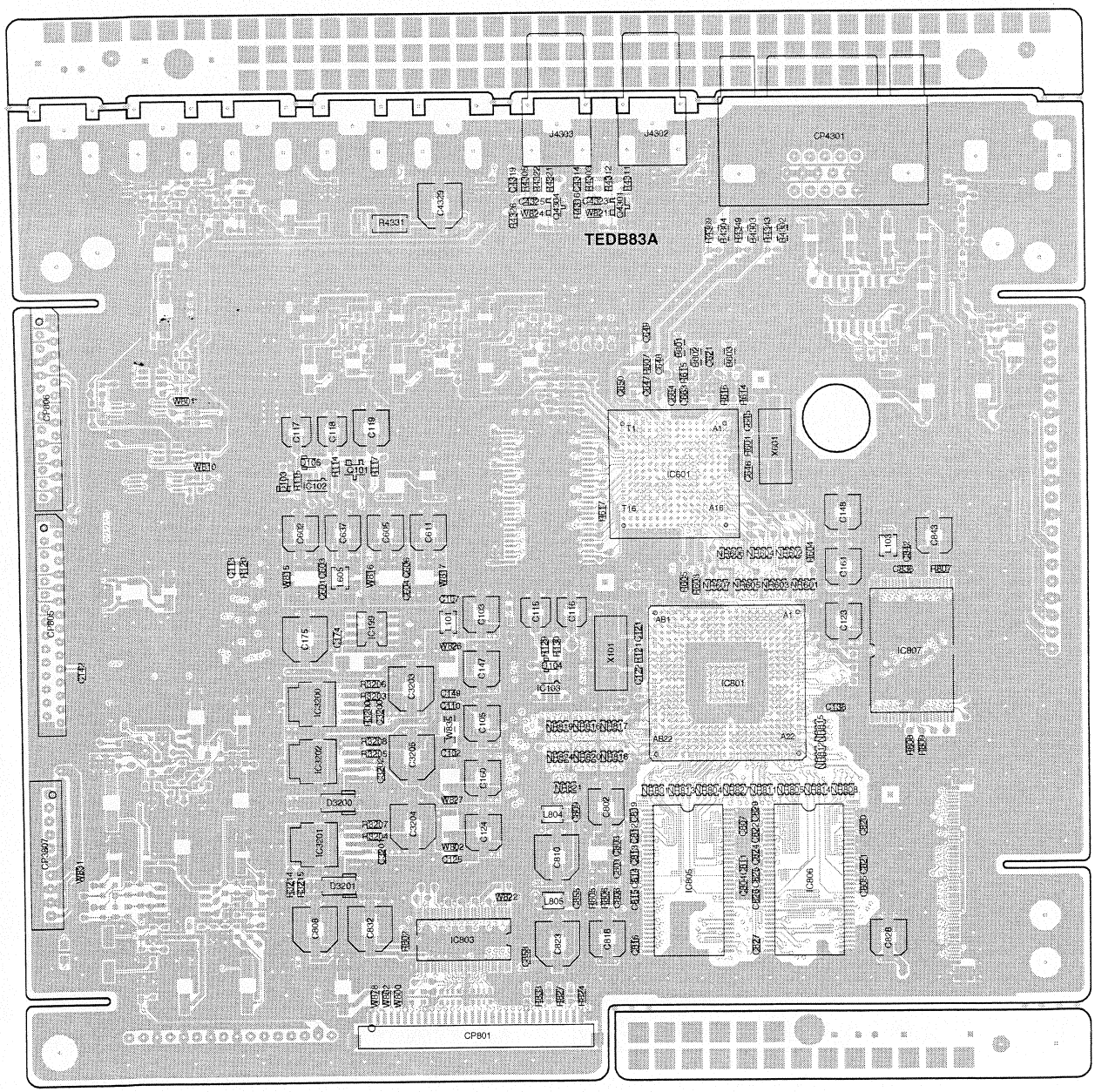


# SCALER/DECODER/LVDS/MEMORY/BUS BLOCK DIAGRAM



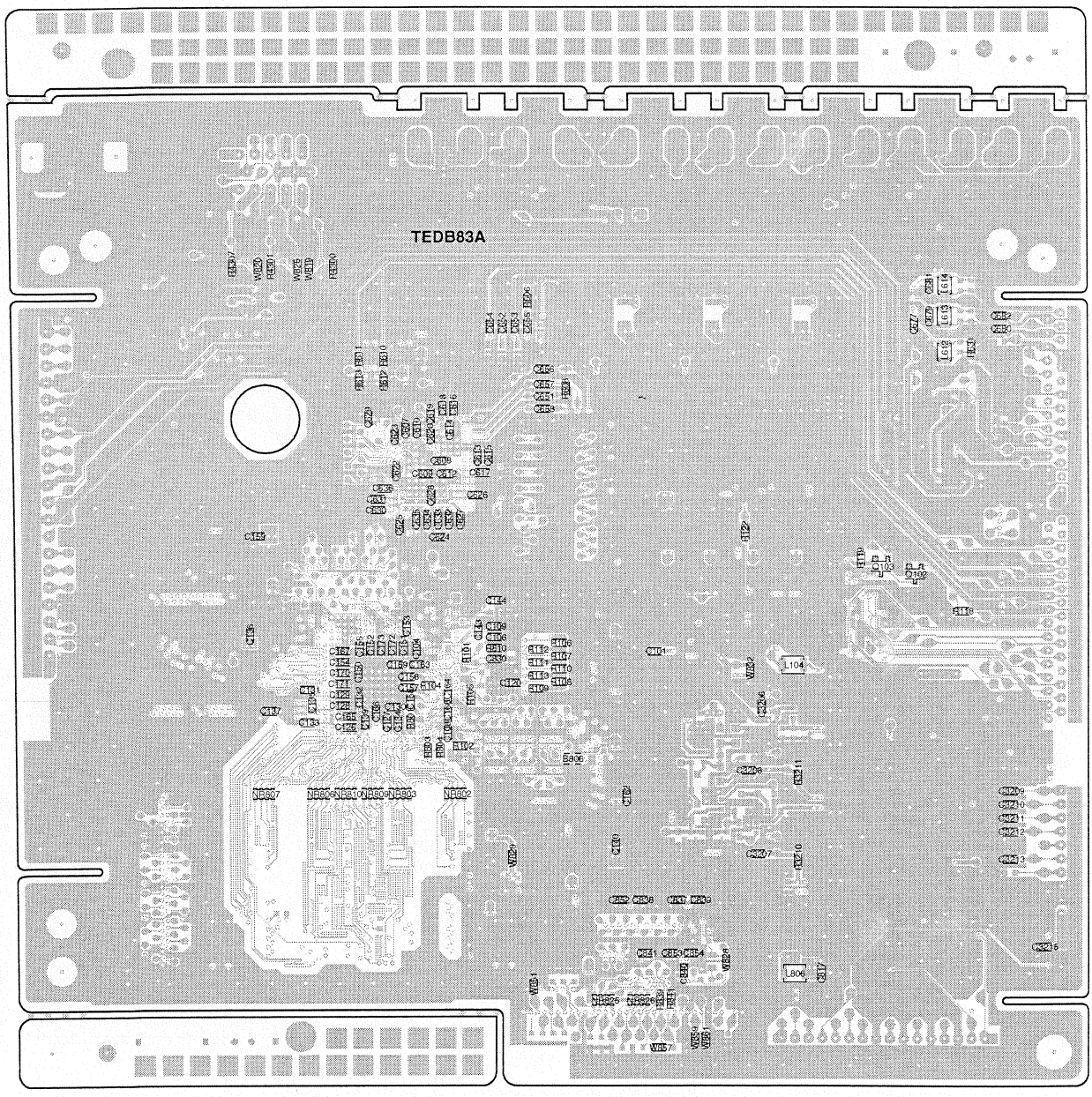
# PRINTED CIRCUIT BOARDS

## LCD (TOP SIDE)

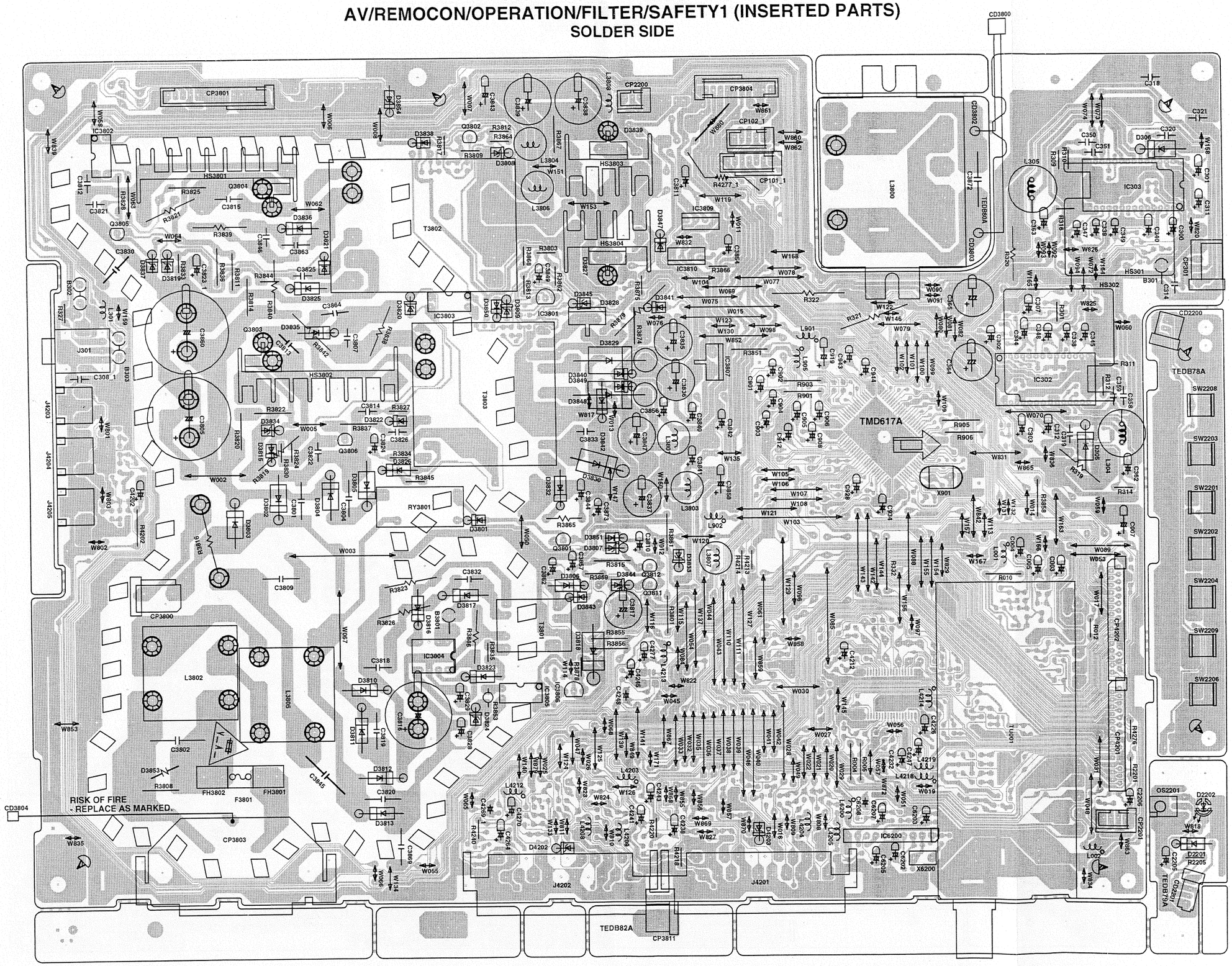


# PRINTED CIRCUIT BOARDS

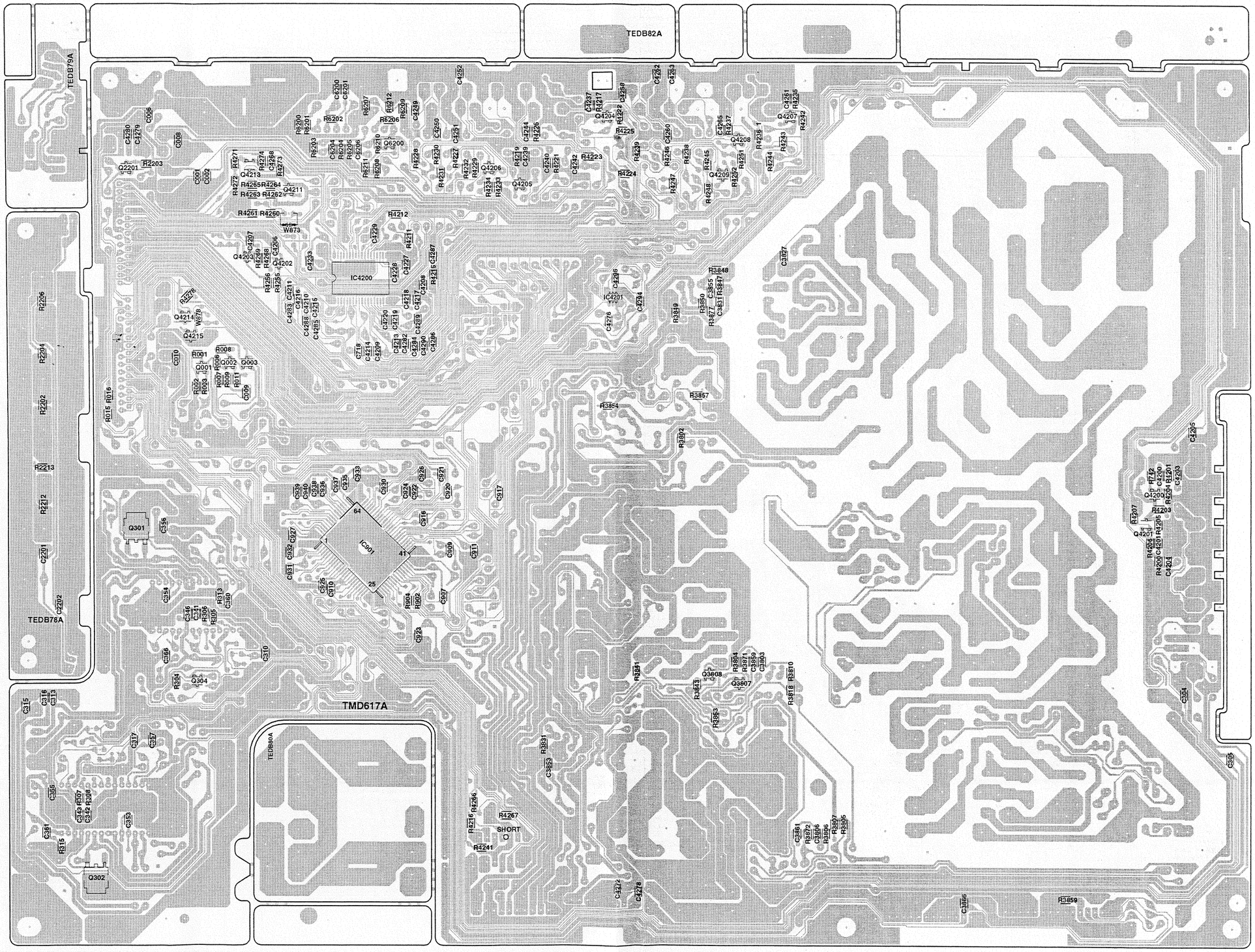
## LCD (BOTTOM SIDE)



# PRINTED CIRCUIT BOARDS
## AV/REMOCON/OPERATION/FILTER/SAFETY1 (INSERTED PARTS)
### SOLDER SIDE

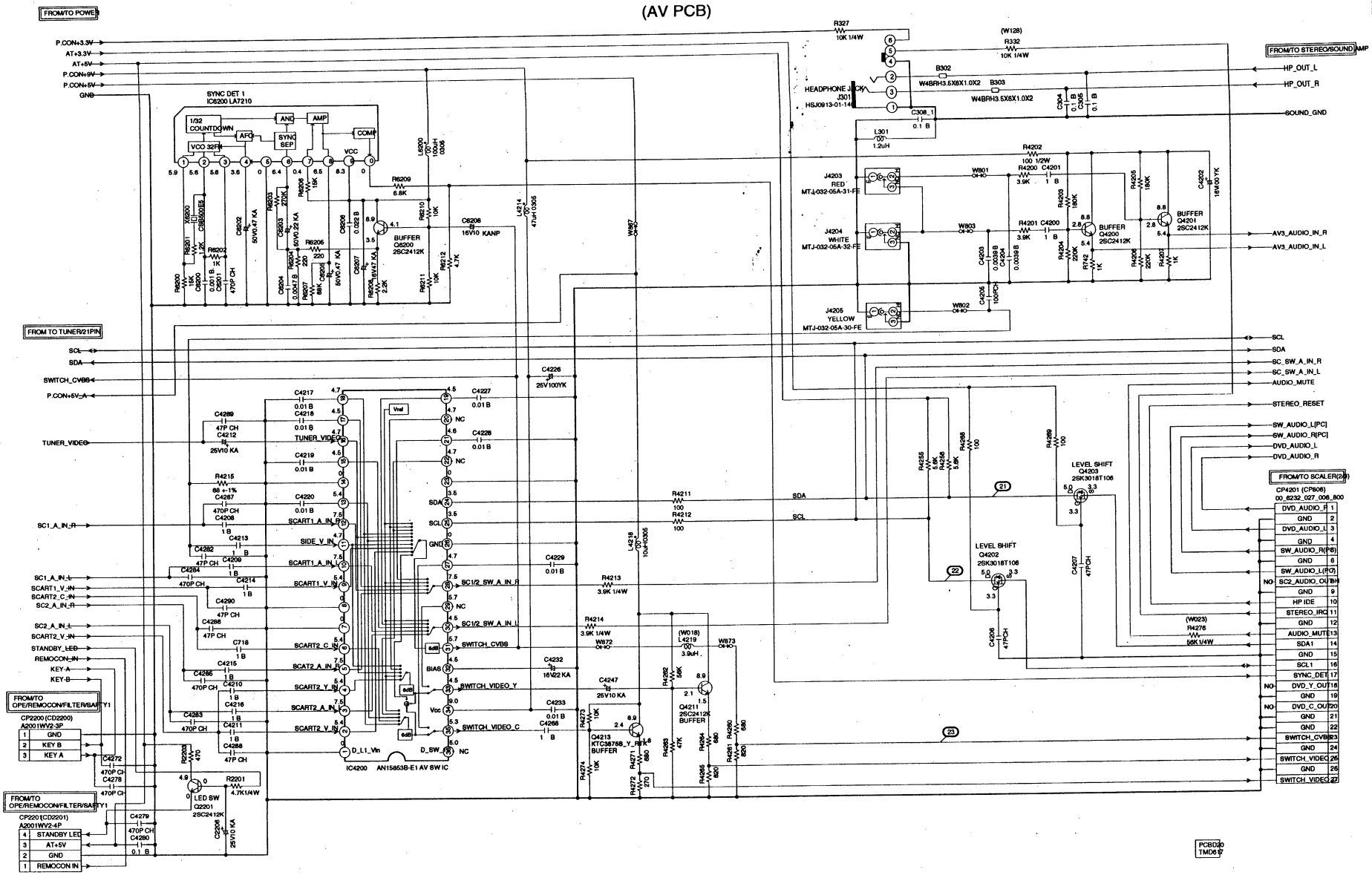


# PRINTED CIRCUIT BOARDS
## AV/REMOCON/OPERATION (CHIP MOUNTED PARTS)
### SOLDER SIDE



# AV SWITCH/SIDE JACK SCHEMATIC DIAGRAM

(AV PCB)

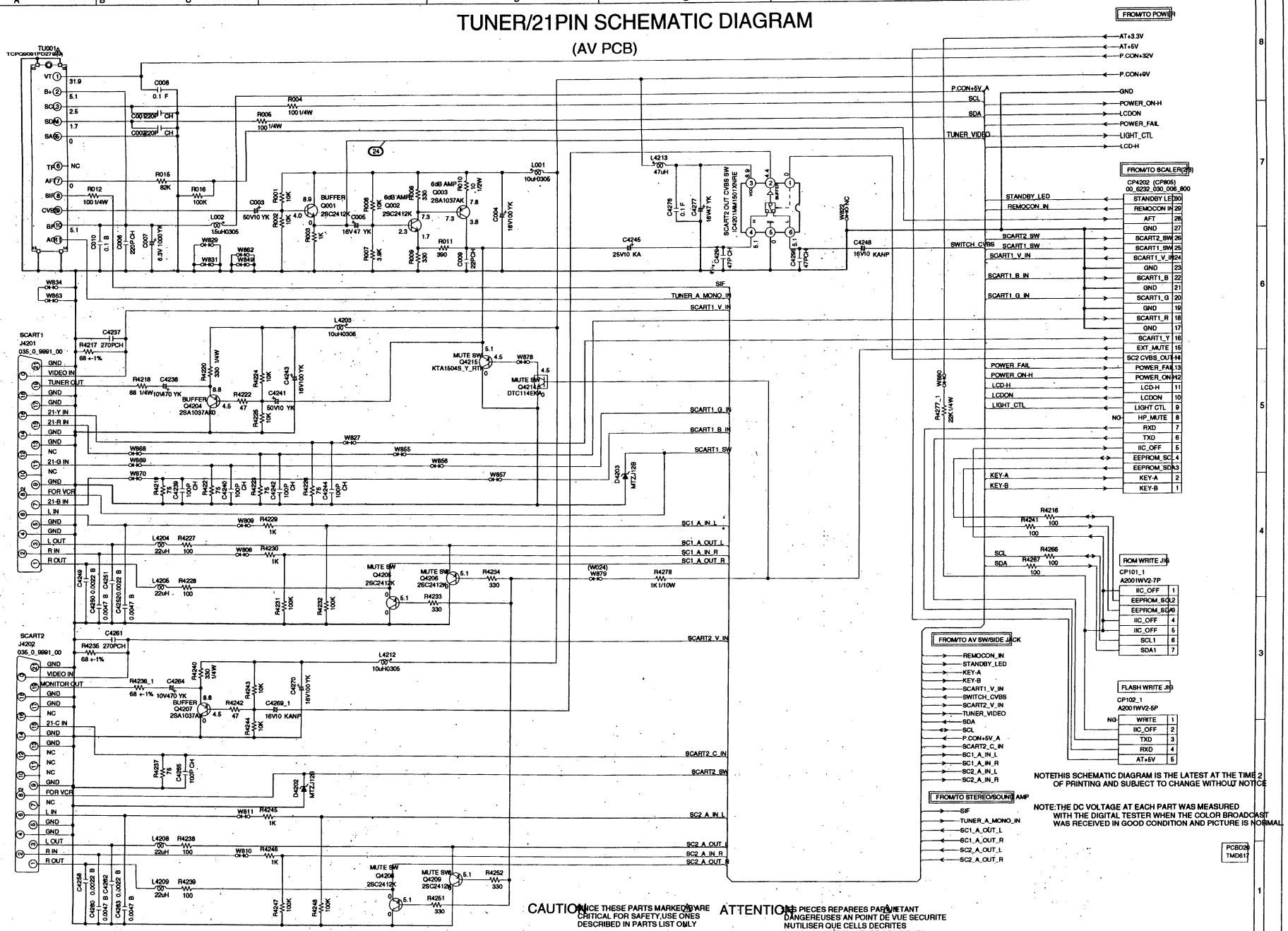



NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

# TUNER/21PIN SCHEMATIC DIAGRAM

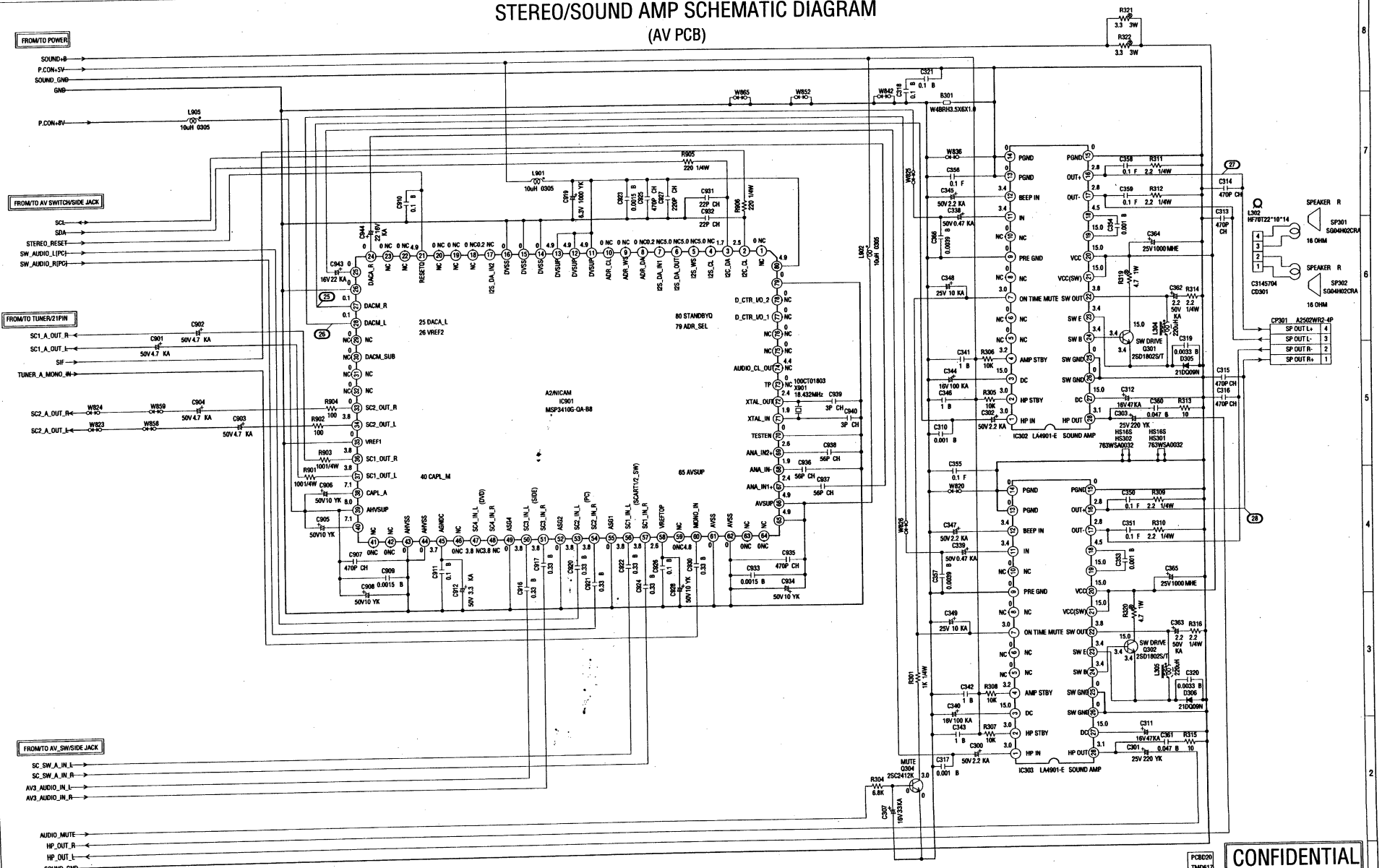
## (AV PCB)




G-3 G-4

# STEREO/SOUND AMP SCHEMATIC DIAGRAM

## (AV PCB)

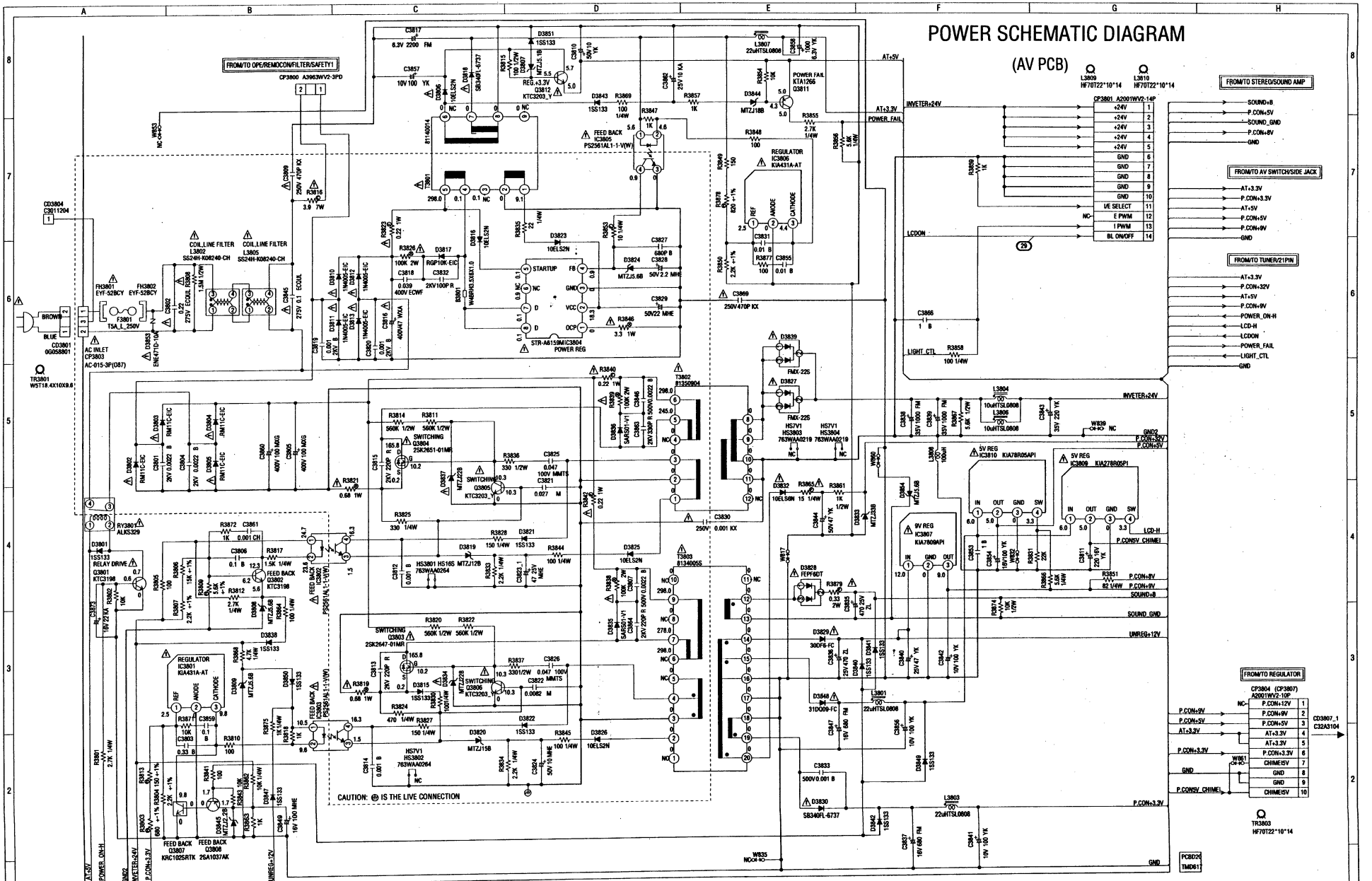



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

# POWER SCHEMATIC DIAGRAM

## (AV PCB)




NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

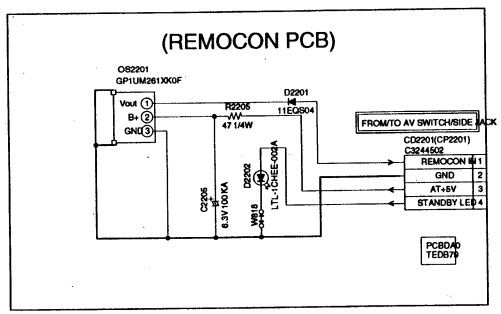
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

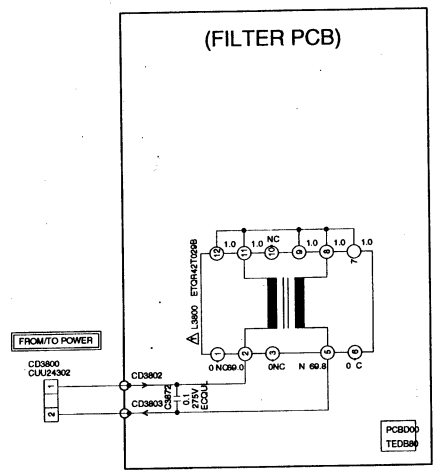
**CAUTION** SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

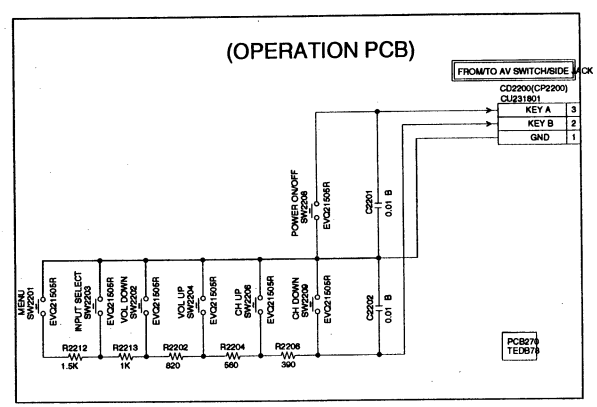
**ATTENTION** LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

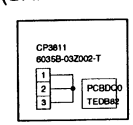
CAUTION: DIGITAL TRANSISTOR

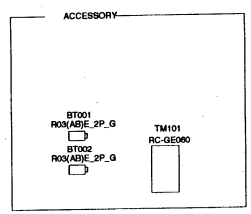
# OPERATION/REMOCON/FILTER/SAFETY1 SCHEMATIC DIAGRAM




NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

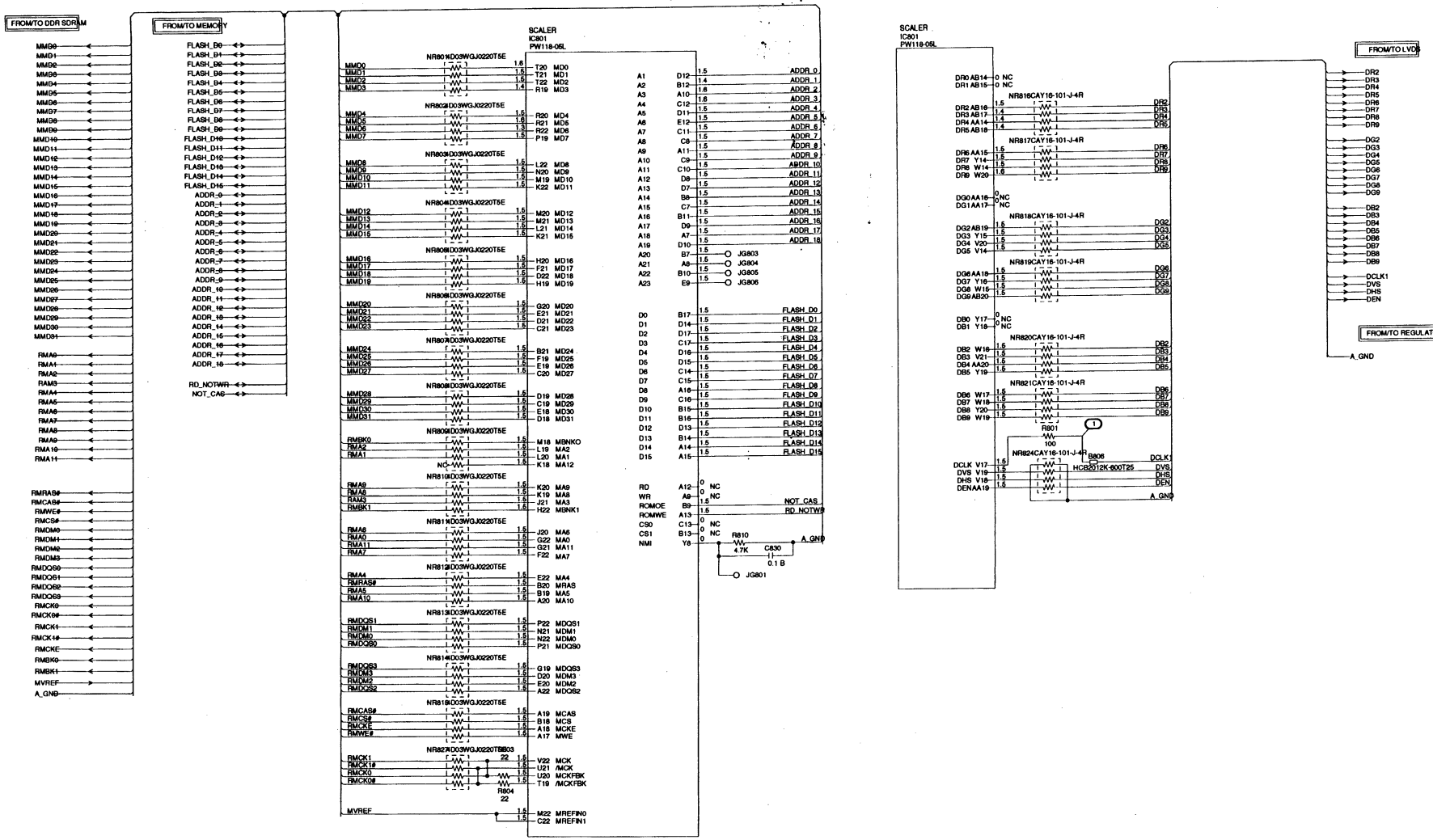
NOTETHIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

CAUTION! NOTICE THESE PARTS MARKED ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY

ATTENTION! LES PIECES REPAREES PAR ⚠ SONT IMPORTANT DANGEREUSES AN POINT DE VUE SECURITE NUTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES RIECES

# SCALER1 SCHEMATIC DIAGRAM

(LCD PCB)

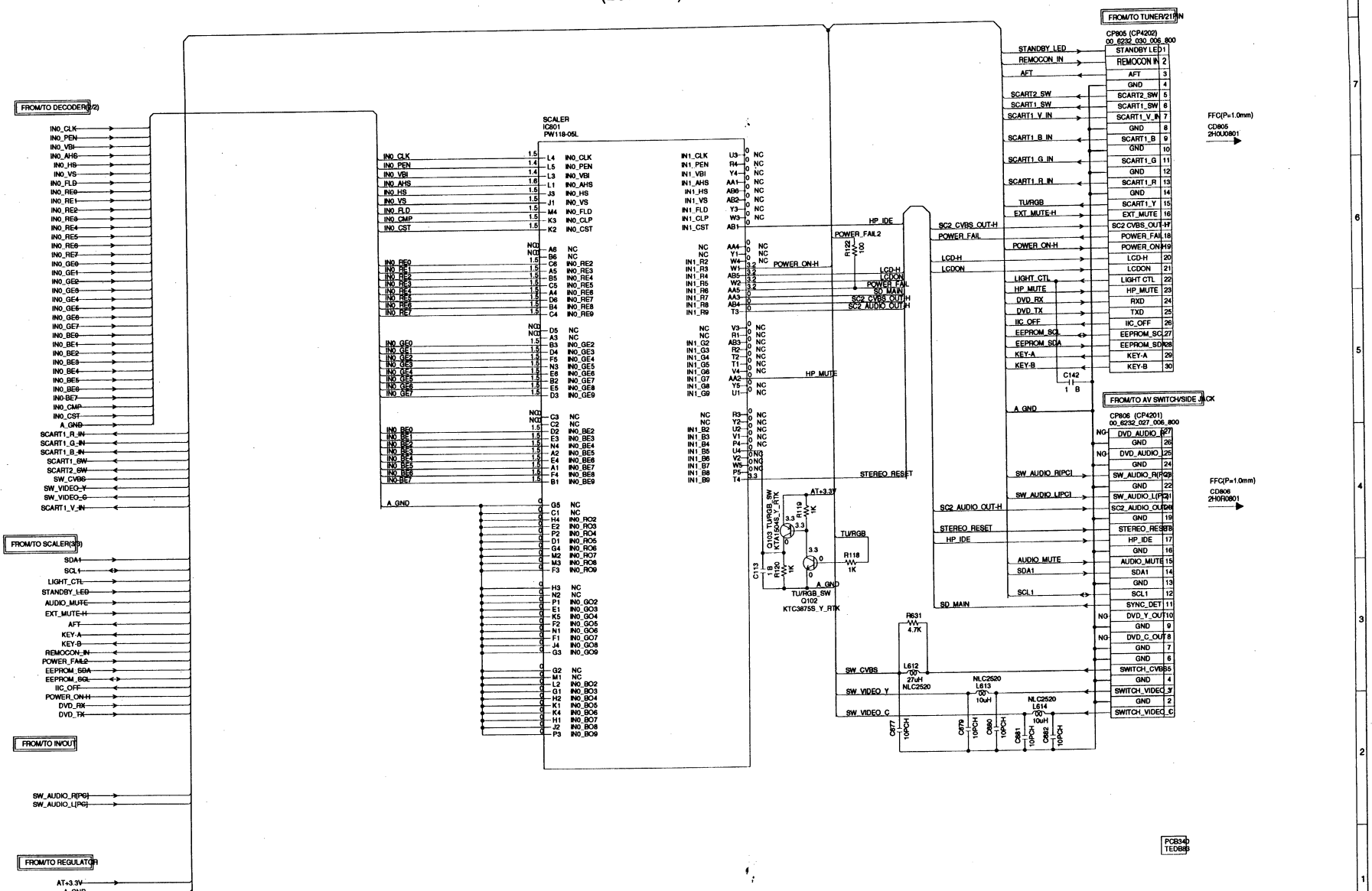



NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTETHIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

# SCALER2 SCHEMATIC DIAGRAM

## (LCD PCB)

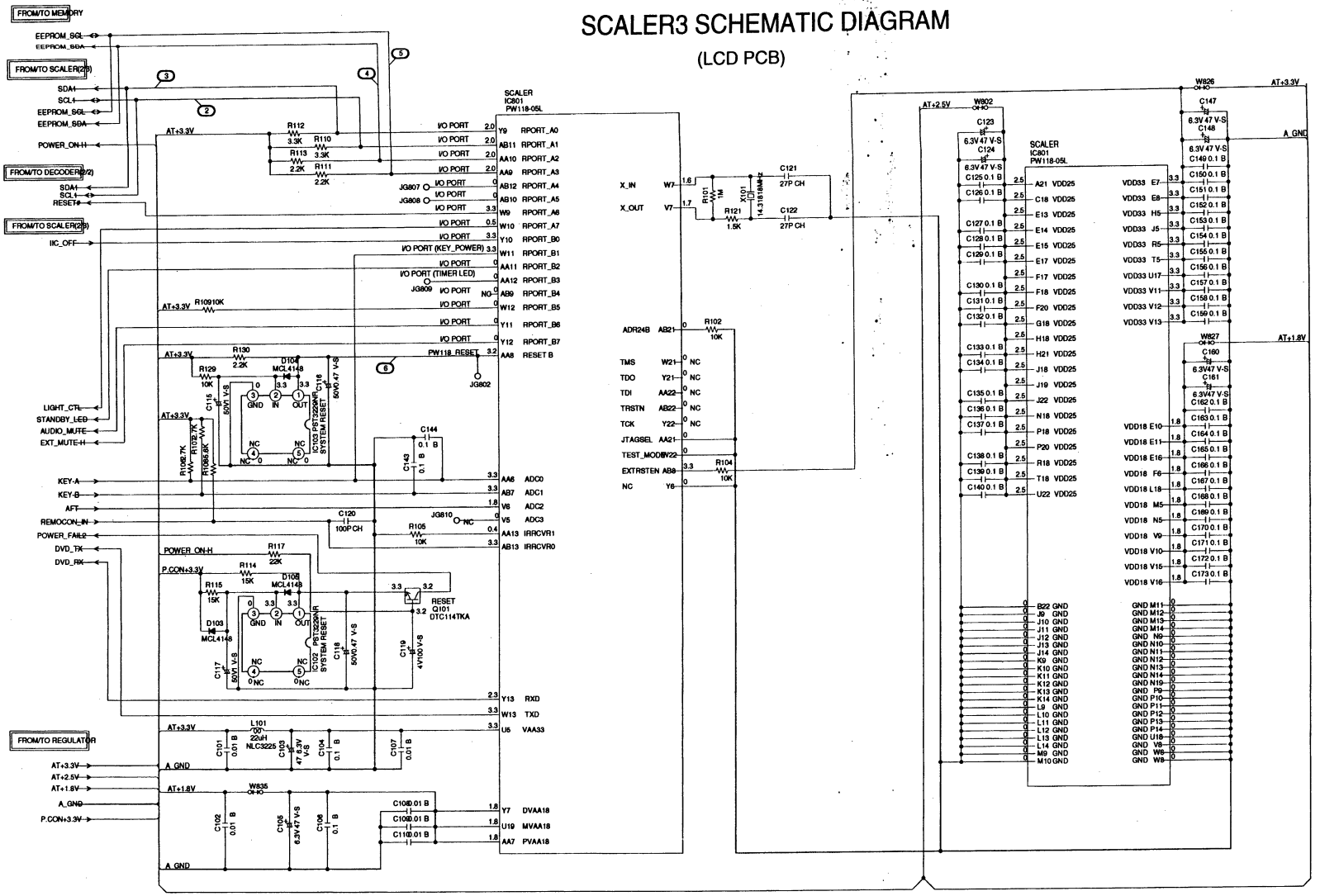



NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

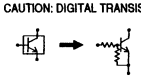
NOTETHIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

# SCALER3 SCHEMATIC DIAGRAM

(LCD PCB)




CAUTION: DIGITAL TRANSISTOR



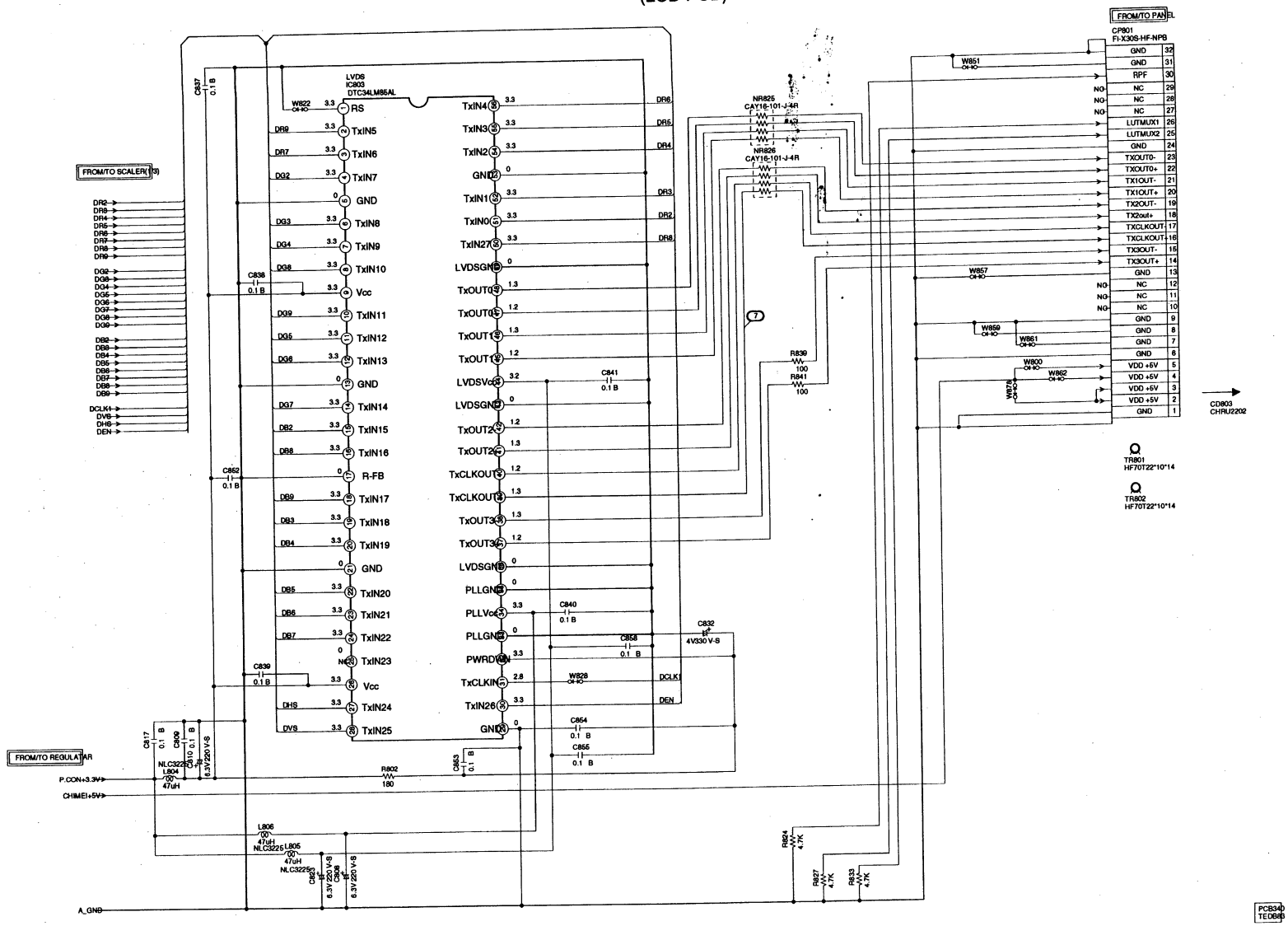
NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTETHIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

PCB340 TEDB88

# LVDS SCHEMATIC DIAGRAM

(LCD PCB)

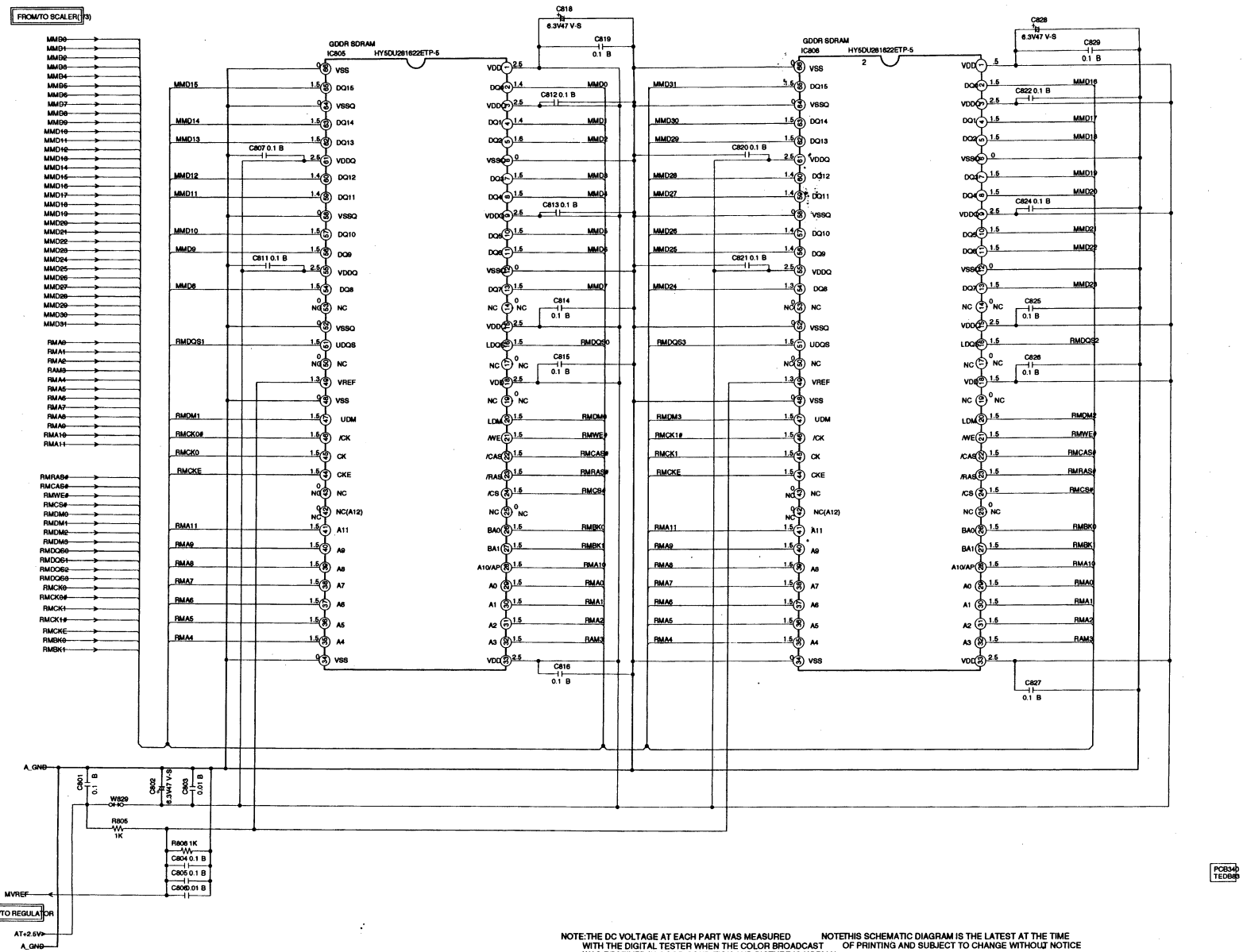



NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTETHIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

# DDR SDRAM SCHEMATIC DIAGRAM

(LCD PCB)

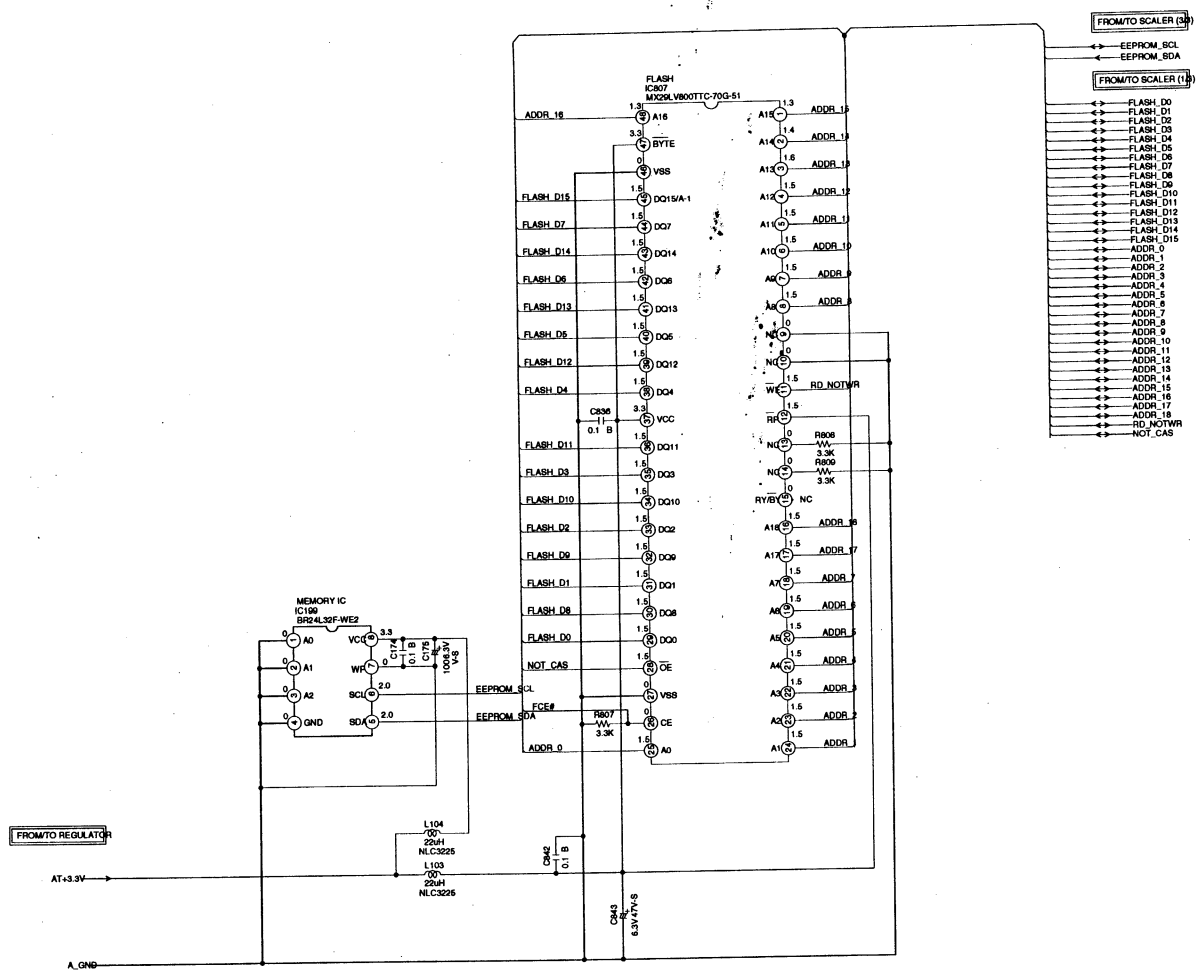



NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTETHIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

# MEMORY SCHEMATIC DIAGRAM

(LCD PCB)



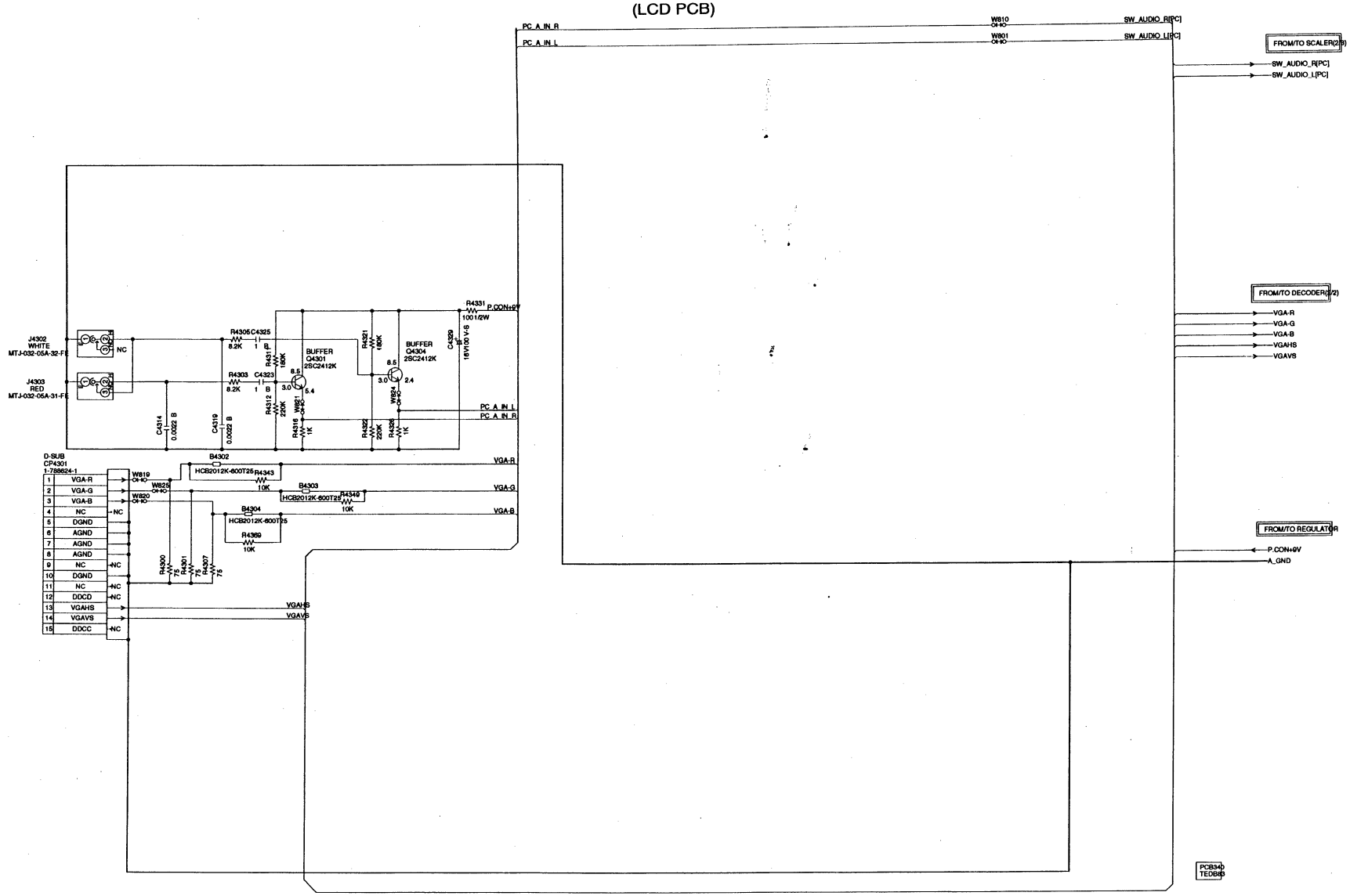

PCB340
TEDB83

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTETHIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

# IN/OUT SCHEMATIC DIAGRAM

(LCD PCB)

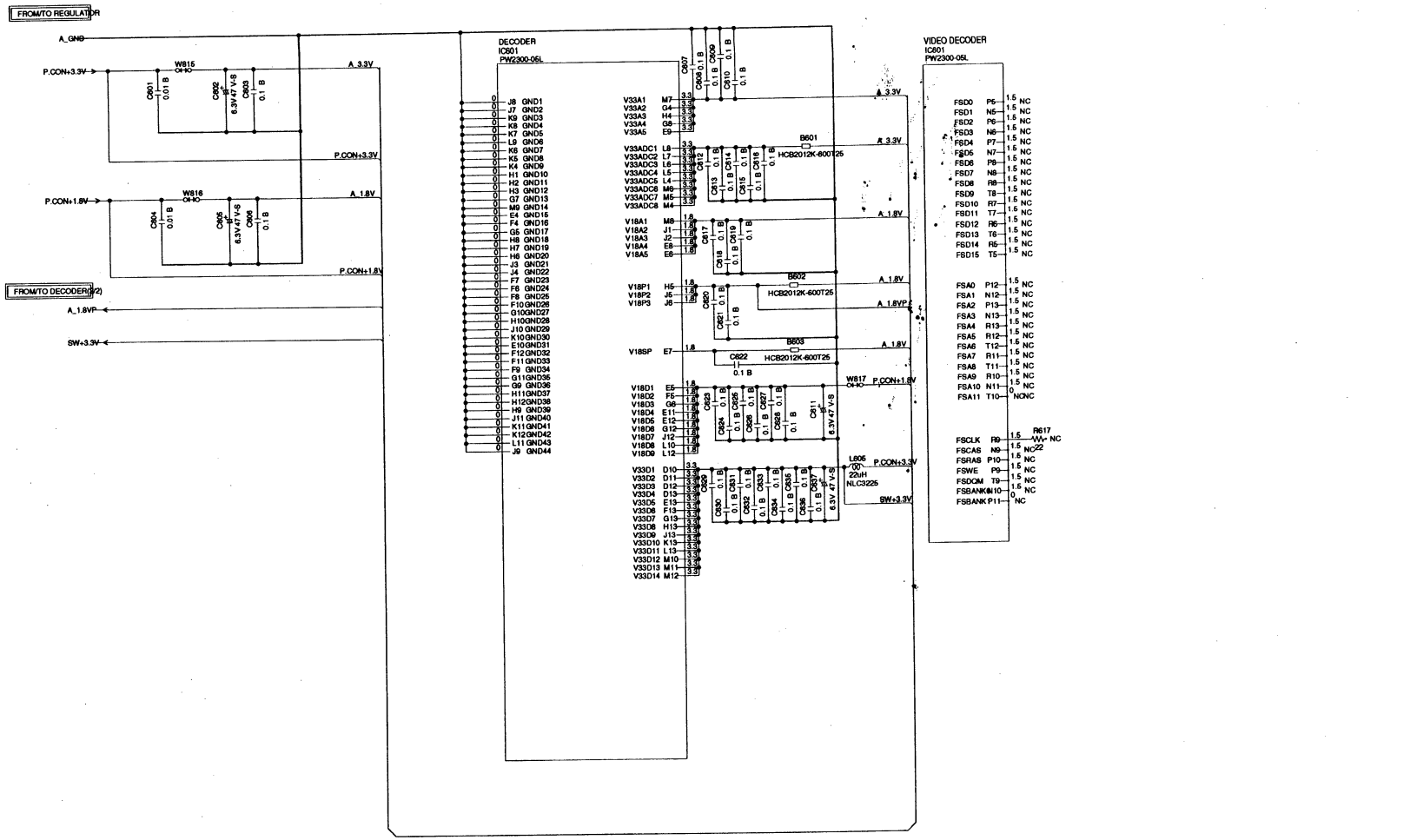



NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

# DECODER1 SCHEMATIC DIAGRAM

## (LCD PCB)

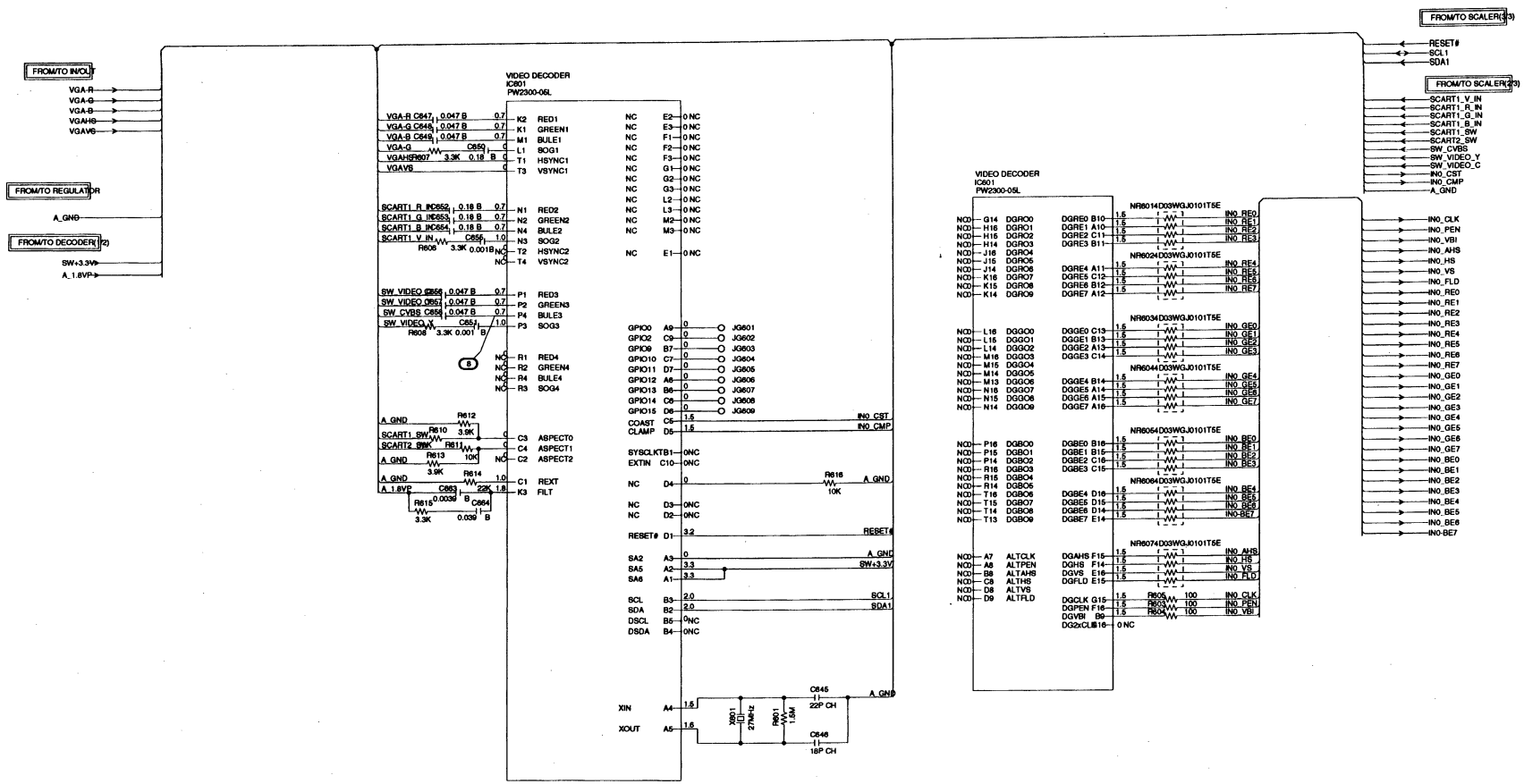



NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTETHIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

# DECODER2 SCHEMATIC DIAGRAM

## (LCD PCB)

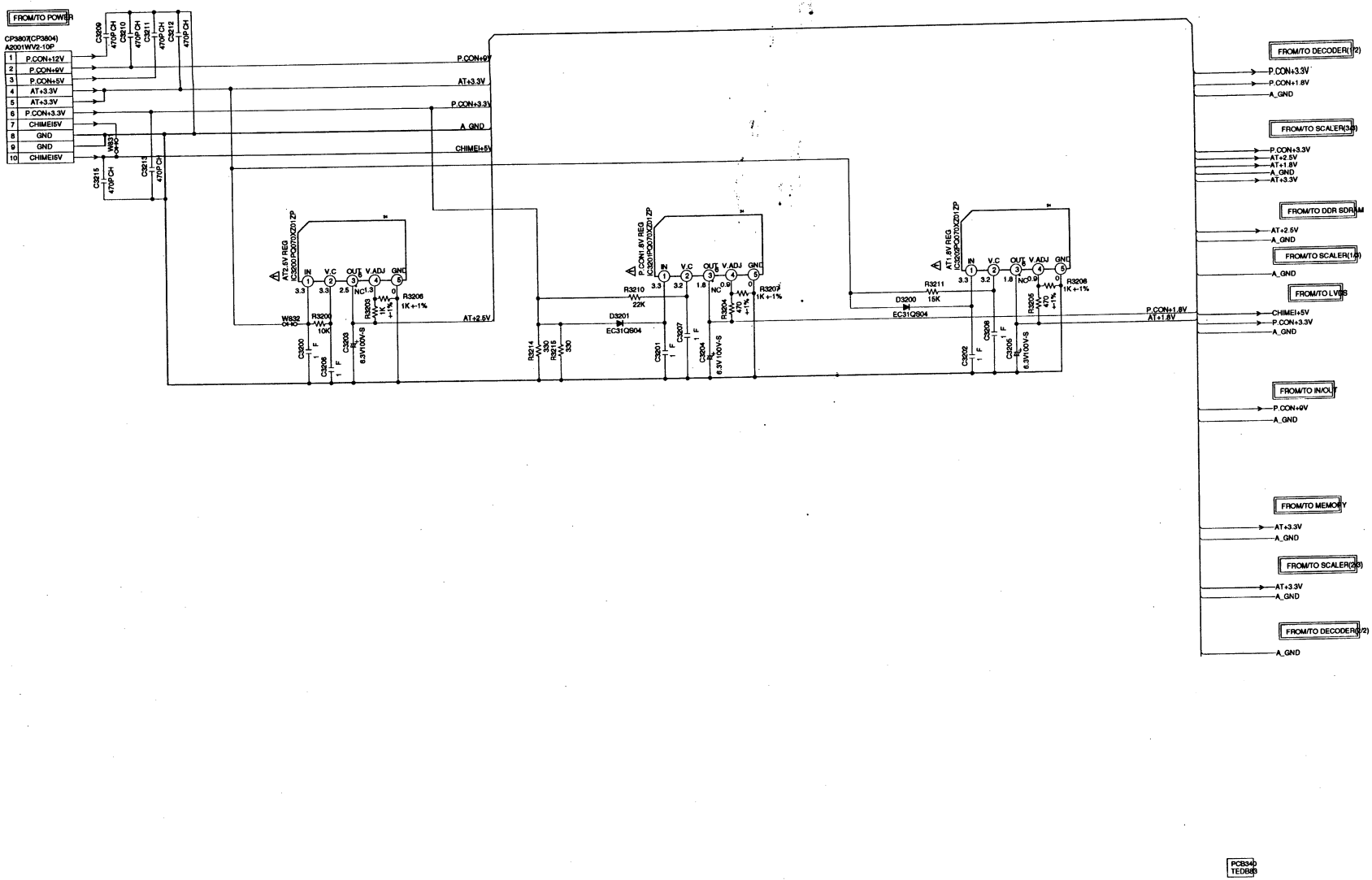



NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

# REGULATOR SCHEMATIC DIAGRAM

(LCD PCB)




CAUTION: FOR SAFETY, USE ONLY THE PARTS MARKED ⚠ WHICH ARE CRITICAL FOR SAFETY. USE ONES DESCRIBED IN PARTS LIST ONLY

ATTENTION: POUR LA SECURITE UTILISER QUE LES PIECES REPAREES PAR ⚠ QUI SONT IMPORTANTES DANGEREUSES AU POINT DE VUE SECURITE. UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

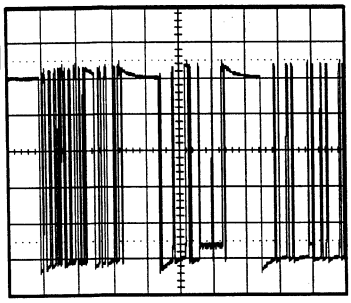
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

# WAVEFORMS

## AV SWITCH/SIDE JACK

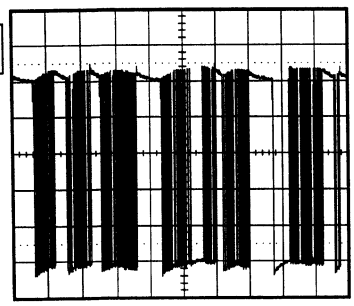
0.5ms
1.0V

(21)



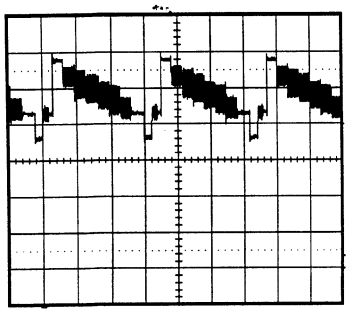
0.5ms
1.0V

(22)



20µs
0.5V

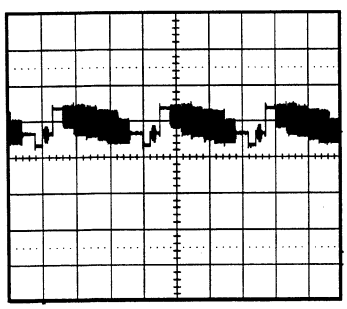
(23)



## TUNER/21PIN

20µs
1.0V

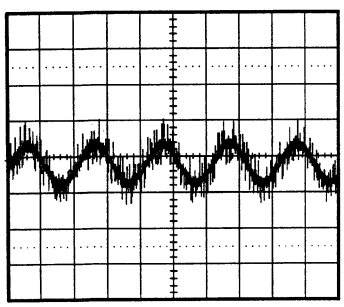
(24)



## STEREO/SOUND AMP

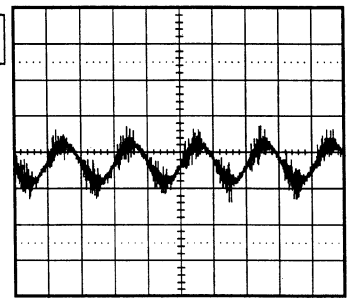
0.5ms
100mV

(25)



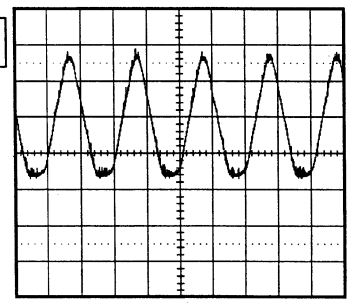
0.5ms
100mV

(26)



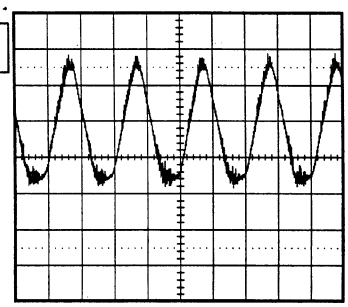
0.5ms
0.5V

(27)



0.5ms
0.5V

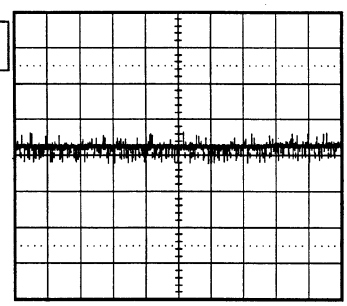
(28)



## POWER

0.5ms
1.0V

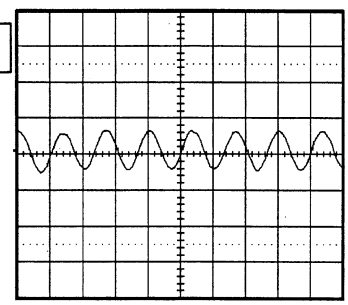
(29)



## SCALER1

10ns
0.5V

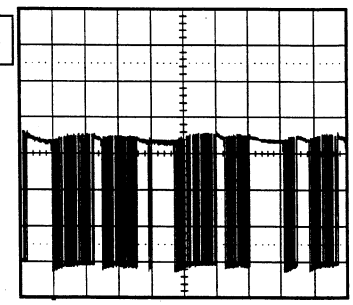
(31)



## SCALER3

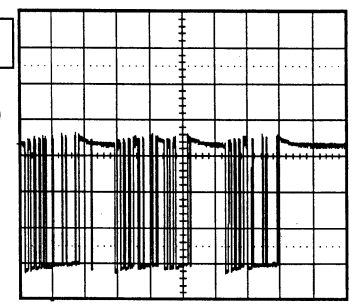
0.5ms
1.0V

(32)



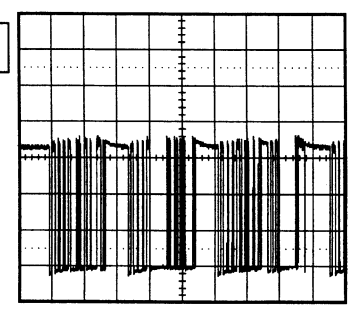
0.5ms
1.0V

(33)



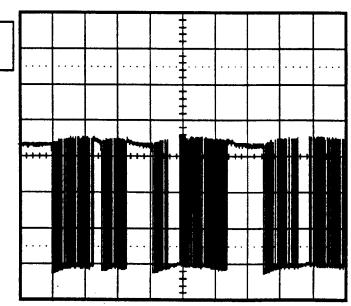
0.5ms
1.0V

(34)



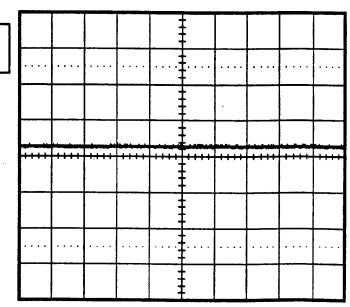
0.5ms
1.0V

(35)



0.5ms
1.0V

(36)



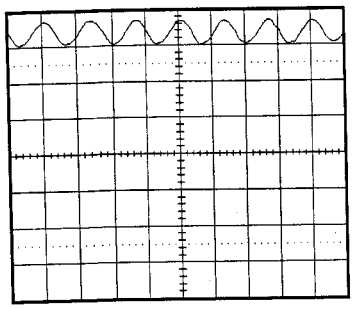
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

# WAVEFORMS

## LVDS

10ns
200mV

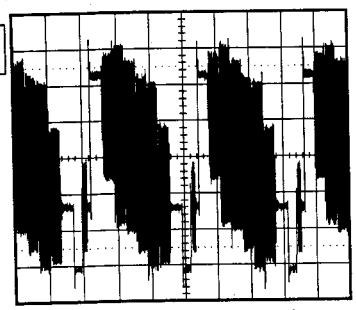
(37)



## DECODER2

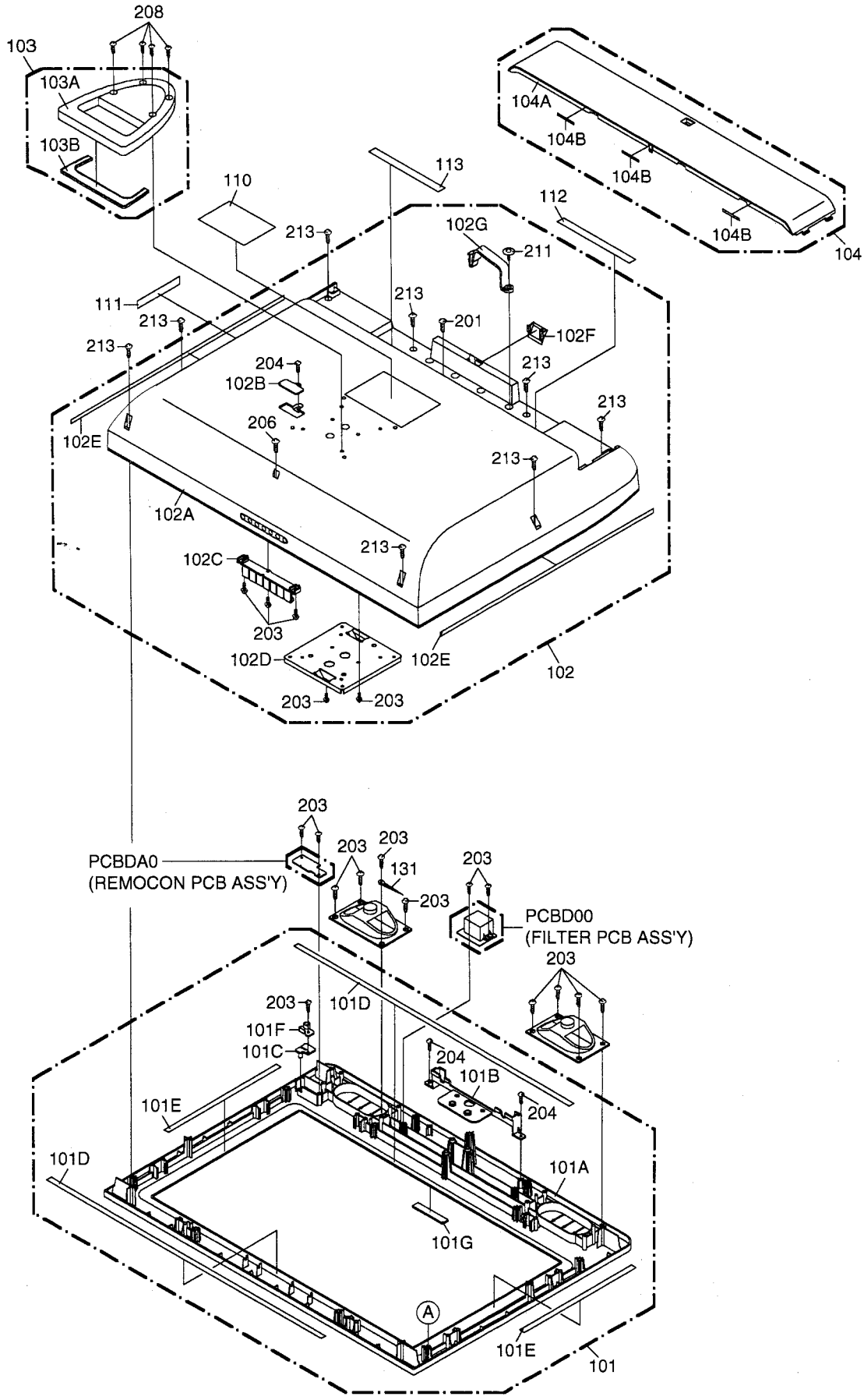
20µs
200mV

(38)

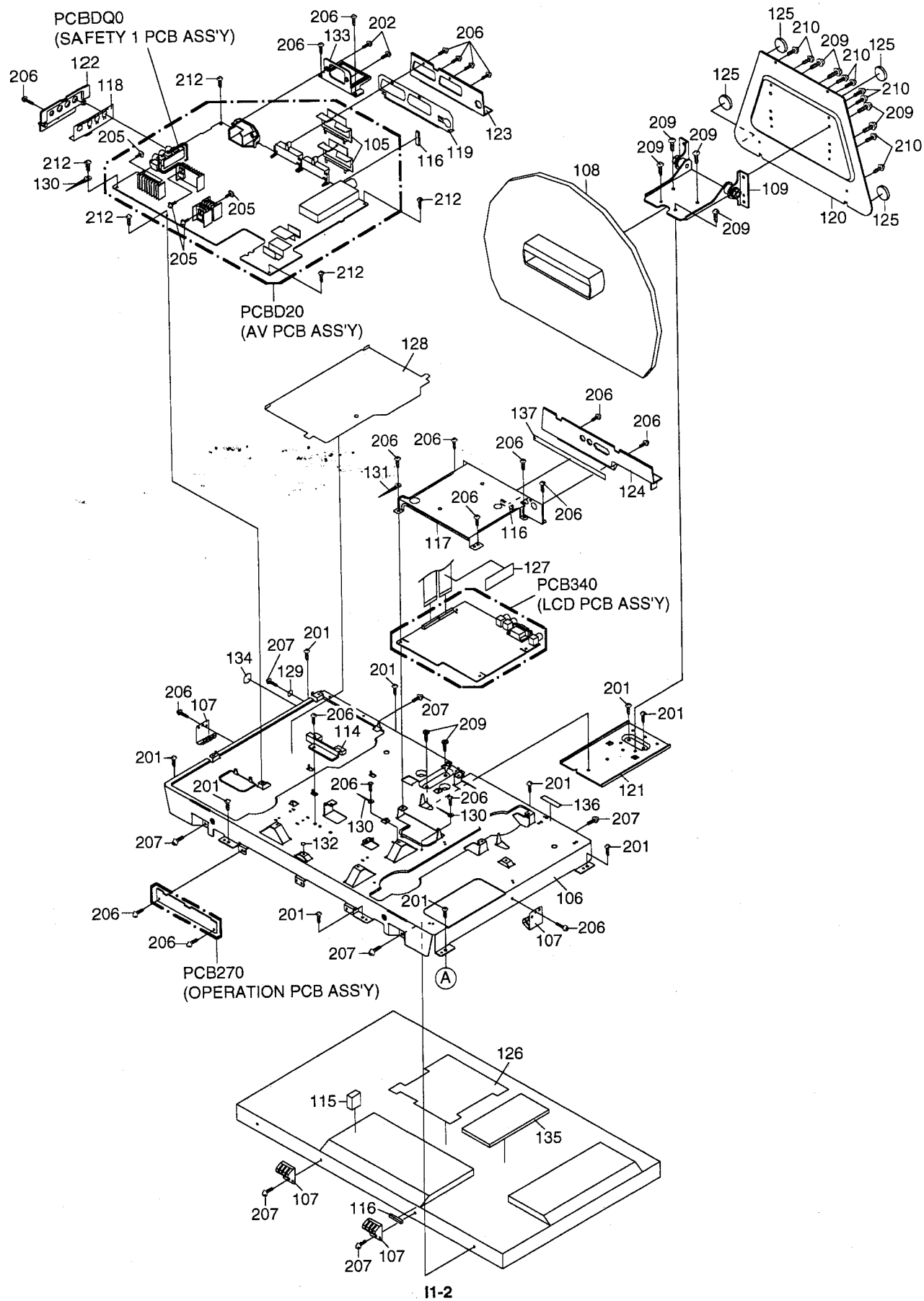


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

# MECHANICAL EXPLODED VIEW



# MECHANICAL EXPLODED VIEW



# MECHANICAL REPLACEMENT PARTS LIST

| REF. NO. | PART NO. | DESCRIPTION | |
|---|---|---|---|
| 101 | 7A7010063A | FRONT CABI ASS'Y | |
| 101A | 701WPJ1306 | CABINET,FRONT | |
| 101B | 702WPB0067 | COVER,HINGE | |
| 101C | 713WPA0347 | GLASS,LED | |
| 101D | 800WQ00086 | FELT SHEET | 9x540xT=0.3 |
| 101E | 800WQ0A049 | FELT SHEET | |
| 101F | 761WPA0360 | HOLDER,LED | |
| 101G | 7232020761 | BADGE,BRAND | |
| 102 | 7A7020027A | BACK CABI ASS'Y | |
| 102A | 702WPJ0038 | CABINET,BACK | |
| 102B | 706WPB0001 | COVER,CONECTOR | |
| 102C | 735WPB0302 | BUTTON,FRAME(TV) | |
| 102D | 761WSA0233 | ANGLE,HANDLE | |
| 102E | 800WQ00087 | FELT SHEET | 9x380xT=0.3 |
| 102F | 761WPA0359 | COVER,HINGE3 | |
| 102G | 774WPA0007 | HOLDER,CORD | |
| 103 | 7A7050002A | HANDLE ASS'Y | |
| 103A | 705WPB0018 | HANDLE 1 | |
| 103B | 705WPB0019 | HANDLE 2 | |
| 104 | 7A7020033A | COVER,BACK(TV) ASS'Y | |
| 104A | 702WPB0063 | COVER,BACK | |
| 104B | 800WQ00088 | FELT SHEET | 2x20xT0.3 |
| 105 | 761WSA0212 | SHIELD,21PIN | |
| 106 | 761WSA0183 | COVER,LCD | |
| 107 | 744WUA0017 | SPRING,EARTH | |
| 108 | 704WPB0008 | STAND | |
| 109 | 706JSA0012 | HINGE ASS'Y | |
| 110 | 7222022688 | SHEET,RATING | |
| 111 | 7230007877 | SHEET,JACK(SIDE) | |
| 112 | 7230007869 | SHEET,JACK1 | |
| 113 | 7230007870 | SHEET,JACK2 | |
| 114 | 761WPA0356 | HOLDER,PCB | |
| 115 | 8965TS202A | CUSHION 65TS20-20 | 20x15x12 |
| 116 | 8965TS0415 | CUSHION 65TS4-2 | 15x50x16 |
| 117 | 752WSA0425 | SHIELD,LCD | |
| 118 | 752WSA0427 | SHIELD,JACK(SIDE) | |
| 119 | 752WSA0445 | SHIELD,JACK1 | |
| 120 | 761WSA0184 | ANGLE,STAND | |
| 121 | 761WSA0185 | ANGLE,HINGE | |
| 122 | 771WPB0045 | PLATE,JACK(SIDE) | |
| 123 | 771WPB0035 | PLATE,JACK1 | |
| 124 | 771WPB0032 | PLATE,JACK2 | |
| 125 | 800WFA0063 | CUSHION,LEG | |
| 126 | 735WEA0004 | SHEET,CU | |
| 127 | 735WEA0007 | SHEET,CU | |
| 128 | 7250000594 | SHEET,PC | |
| 129 | 82H3065E5Q | TOOTHED LOCK WASHER | 3.0x6.5xT0.45 |
| 130 | 899EFBA002 | WIRING-CLIP | |
| 131 | 8995034000 | CORD CLIP UL CO. | |
| 132 | 800WB0A008 | FIBER WASHER | |
| 133 | 771WPB0036 | PLATE,JACK(AC-INLET) | |
| 134 | 7260000353 | SHEET,EARTH MARK | |
| 135 | 800WF0A008 | CUSHION | |
| 136 | 800WQ0A051 | FELT SHEET | |
| 137 | 800WQ0A079 | FELT SHEET | |

| REF. NO. | PART NO. | DESCRIPTION | |
|---|---|---|---|
| 201 | 8117540A6U | SCREW,TAP TITE(B0) TRUSS | 4x16 |
| 202 | 8117140A2U | SCREW,TAPPING(B0) PAN | 4x12 |
| 203 | 8110630A0U | SCREW,TAP TITE(P) BRAZIER | 3x10 |
| 204 | 811063080U | SCREW,TAP TITE(P) BRAZIER | 3x8 |
| 205 | 8109I30A0U | SCREW,TAP TITE(B) WH7 | 3x10 |
| 206 | 8109230A0U | SCREW,TAP TITE(B) BIND | 3x10 |
| 207 | 810A13080U | SCREW,WASHER(A) | M3x8 |
| 208 | 8102240A2U | SCREW,BIND | M4x12 |
| 209 | 810A140A0U | SCREW,WASHER(A) | M4x10 |
| 210 | 8110K30A0U | SCREW,TAP TITE(P) LAMIHEAD | 3x10 |
| 211 | 8159130A0S | SCREW,TAPPING(B) WASHER12 PAN | 3x10 |
| 212 | 8109D30A0U | SCREW,TAP TITE(B) WH8 | 3x10 |
| 213 | 8110230A4U | SCREW,TAP TITE(P) BIND | 3x14 |
| --- | 791WHAA126 | FILM BAG | |
| --- | 792WHA0581 | PACKAGE,TOP | |
| --- | 792WHA0582 | PACKAGE,BOTTOM | |
| --- | 793WCD1591 | GIFT BOX | |
| --- | A3R802A975 | INSTRUCTION BOOK KIT | |
| --- | J3R80201A | INSTRUCTION BOOK | |
| --- | JB5KD100 | POLYBAG,INSTRUCTION(RED CAUTION) | |

# ELECTRICAL REPLACEMENT PARTS LIST

| REF. NO. | PART NO. | DESCRIPTION | |
|---|---|---|---|
| | | **RESISTORS** | |
| R319 | R3X1814R7J | R,METAL OXIDE | 4.7 OHM 1W |
| R320 | R3X1814R7J | R,METAL OXIDE | 4.7 OHM 1W |
| R321 | R3X28B3R3J | R,METAL OXIDE | 3.3 OHM 3W |
| R322 | R3X28B3R3J | R,METAL OXIDE | 3.3 OHM 3W |
| R332 | R002T4103J | RC | 10K OHM 1/4W |
| ⚠ R3808 | R002T2155J | RC | 1.5M OHM 1/2W |
| ⚠ R3816 | R5X2AE3R9J | R,CEMENT | 3.9 OHM 7W |
| ⚠ R3819 | R3X181R68J | R,METAL OXIDE | 0.68 OHM 1W |
| ⚠ R3821 | R3X181R68J | R,METAL OXIDE | 0.68 OHM 1W |
| ⚠ R3823 | R63581R22J | R,FUSE | 0.22 OHM 1W |
| ⚠ R3826 | R3X28A104J | R,METAL OXIDE | 100K OHM 2W |
| ⚠ R3838 | R3X28A104J | R,METAL OXIDE | 100K OHM 2W |
| ⚠ R3839 | R3X28A104J | R,METAL OXIDE | 100K OHM 2W |
| ⚠ R3840 | R63581R22J | R,FUSE | 0.22 OHM 1W |
| ⚠ R3842 | R63581R22J | R,FUSE | 0.22 OHM 1W |
| ⚠ R3846 | R3X1813R3J | R,METAL OXIDE | 3.3 OHM 1W |
| ⚠ R3853 | R635U4100J | R,FUSE | 10 OHM 1/4W |
| ⚠ R3865 | R65584150J | R,FUSE | 15 OHM 1/4W |
| ⚠ R3879 | R6558AR33J | R,FUSE | 0.33 OHM 2W |
| R4277 | R002T4223J | RC | 22K OHM 1/4W |
| | | **CAPACITORS** | |
| C364 | E5EZF3102M | CE | 1000 UF 25V |
| C365 | E5EZF3102M | CE | 1000 UF 25V |
| C3801 | C0JBB07H3K | CC | 0.0022UF 2KV B |
| ⚠ C3802 | P2122B224M | CMP | 0.22 UF 275V ECQUL |
| ⚠ C3804 | C0JBB07H3K | CC | 0.0022UF 2KV B |
| ⚠ C3805 | E62XHH101M | CE | 5 100 UF 400V |
| ⚠ C3809 | CD39B0MQ2K | CC | 470 PF 250V |
| C3813 | C03L0R7H2K | CC | 220 PF 2KV R |
| C3815 | C03L0R7H2K | CC | 220 PF 2KV R |
| C3816 | E02B0H470M | CE | 47 UF 400V WXA |
| C3817 | E61FF0222D | CE | 2200 UF 6.3V |
| C3818 | P411F4393J | CMPP | 0.039 UF 400V ECWF |
| C3819 | C0JBB0713K | CC | 0.001 UF 2KV B |
| C3820 | C0JBB0713K | CC | 0.001 UF 2KV B |
| ⚠ C3830 | CD39E0M13M | CC | 0.001 UF 250V |
| C3832 | C0PLRR712K | CC | 100 PF 2KV R |
| ⚠ C3838 | E61FF4102D | CE | 1000 UF 35V |
| ⚠ C3839 | E61FF4102D | CE | 1000 UF 35V |
| ⚠ C3845 | P2122B104M | CMP | 0.1 UF 275V ECQUL |
| ⚠ C3860 | E62XHH101M | CE | 5 100 UF 400V |
| C3863 | C03L0R7L2K | CC | 330 PF 2KV R |
| C3864 | C03L0R7H2K | CC | 220 PF 2KV R |
| ⚠ C3869 | CD39B0MQ2K | CC | 470 PF 250V |
| C3872 | P2122B104M | CMP | 0.1 UF 275V ECQUL |
| | | **DIODES** | |
| D103 | DDDRL41480 | DIODE,SILICON | MCL4148 |
| D104 | DDDRL41480 | DIODE,SILICON | MCL4148 |
| D105 | DDDRL41480 | DIODE,SILICON | MCL4148 |
| D305 | D28T21DQN9 | DIODE,SCHOTTKY | 21DQ09N-TA2B1 |
| D306 | D28T21DQN9 | DIODE,SCHOTTKY | 21DQ09N-TA2B1 |
| D2201 | D28TEQS040 | DIODE,SCHOTTKY | 11EQS04TA1B2 |
| D2202 | 0021E2Q140 | LED | LTL-1CHEE-002A |
| D3200 | D28R1QS040 | DIODE | EC31QS04-TE12L |
| D3201 | D28R1QS040 | DIODE | EC31QS04-TE12L |
| D3801 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| ⚠ D3802 | D2WTRM11C0 | DIODE,SILICON | RM11C-EIC |
| ⚠ D3803 | D2WTRM11C0 | DIODE,SILICON | RM11C-EIC |
| ⚠ D3804 | D2WTRM11C0 | DIODE,SILICON | RM11C-EIC |
| ⚠ D3805 | D2WTRM11C0 | DIODE,SILICON | RM11C-EIC |
| ⚠ D3806 | D28TELS2N2 | DIODE,RECTIFER | 10ELS2N-TA1B2 |
| D3807 | D97U05R11B | DIODE,ZENER | MTZJ5.1B T-77 |
| D3808 | D97U05R61B | DIODE,ZENER | MTZJ5.6B T-77 |
| D3809 | D97U05R61B | DIODE,ZENER | MTZJ5.6B T-77 |
| ⚠ D3810 | D2WXN40050 | DIODE,SILICON | 1N4005-EIC |
| ⚠ D3811 | D2WXN40050 | DIODE,SILICON | 1N4005-EIC |
| ⚠ D3812 | D2WXN40050 | DIODE,SILICON | 1N4005-EIC |
| ⚠ D3813 | D2WXN40050 | DIODE,SILICON | 1N4005-EIC |
| D3815 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D3816 | D28TELS2N2 | DIODE,RECTIFER | 10ELS2N-TA1B2 |
| D3817 | D2WXGP10K0 | DIODE,RECTIFER | RGP10K-EIC |
| ⚠ D3818 | D2LKB340F0 | DIODE,SCHOTTKY | SB340FL-6737 |
| D3819 | D97U01201B | DIODE,ZENER | MTZJ12B T-77 |
| D3820 | D97U01501B | DIODE,ZENER | MTZJ15B T-77 |
| D3821 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D3822 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D3823 | D28TELS2N2 | DIODE,RECTIFER | 10ELS2N-TA1B2 |

| REF. NO. | PART NO. | DESCRIPTION | |
|---|---|---|---|
| | | **DIODES** | |
| D3824 | D97U05R61B | DIODE,ZENER | MTZJ5.6B T-77 |
| D3825 | D28TELS2N2 | DIODE,RECTIFER | 10ELS2N-TA1B2 |
| D3826 | D28TELS2N2 | DIODE,RECTIFER | 10ELS2N-TA1B2 |
| ⚠ D3827 | D2BAMX22S0 | DIODE,SCHOTTKY | FMX-22S |
| ⚠ D3828 | D230PF6DT0 | DIODE SILICON | FEPF6DT |
| ⚠ D3829 | D28F30DF60 | DIODE,RECTIFER | 30DF6-FC |
| ⚠ D3830 | D2LKB340F0 | DIODE,SCHOTTKY | SB340FL-6737 |
| ⚠ D3832 | D28TELS6N6 | DIODE,RECTIFER | 10ELS6N-TA1B2 |
| D3833 | D97U03301B | DIODE,ZENER | MTZJ33B T-77 |
| ⚠ D3834 | D97U02201B | DIODE ZENER | MTZJ22B T-77 |
| D3835 | D2BXARS010 | DIODE SILICON | SARS01-V1 |
| D3836 | D2BXARS010 | DIODE SILICON | SARS01-V1 |
| ⚠ D3837 | D97U02201B | DIODE,ZENER | MTZJ22B T-77 |
| D3838 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| ⚠ D3839 | D2BAMX22S0 | DIODE,SCHOTTKY | FMX-22S |
| D3840 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D3841 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D3842 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D3843 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D3844 | D97U01801B | DIODE,ZENER | MTZJ18B T-77 |
| D3845 | D97U02R21B | DIODE,ZENER | MTZJ2.2B T-77 |
| D3847 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| ⚠ D3848 | D28F31DQ09 | DIODE,SCHOTTKY | 31DQ09-FC |
| D3849 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D3850 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D3851 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| ⚠ D3853 | D6C047110A | DIODE,VARISTA | ENE471D-10A |
| D3854 | D97U05R61B | DIODE,ZENER | MTZJ5.6B T-77 |
| D4202 | D97U01201B | DIODE,ZENER | MTZJ12B T-77 |
| D4203 | D97U01201B | DIODE,ZENER | MTZJ12B T-77 |
| | | **ICS** | |
| IC102 | I9UF032290 | IC | PST3229NR |
| IC103 | I9UF032290 | IC | PST3229NR |
| IC199 | S3R802AE01 | MEMORY DATA | BR24L32F-WE2 |
| IC302 | I03DP901E0 | IC | LA4901-E |
| IC303 | I03DP901E0 | IC | LA4901-E |
| IC601 | IFCM023000 | IC | PW2300-05L |
| IC801 | IFCM0W1180 | IC | PW118-05L |
| IC803 | IFKJ0LM850 | IC | DTC34LM85AL |
| IC805 | ICLJ0622E5 | IC | HY5DU281622ETP-5 |
| IC806 | ICLJ0622E5 | IC | HY5DU281622ETP-5 |
| IC807 | S3R802AF01 | MEMORY DATA | MX29LV800TTC-70G-51 |
| IC901 | I19FF34100 | IC | MSP3410G-QA-B8 |
| ⚠ IC3200 | I0GF9XZ010 | IC | PQ070XZ01ZP |
| ⚠ IC3201 | I0GF9XZ010 | IC | PQ070XZ01ZP |
| ⚠ IC3202 | I0GF9XZ010 | IC | PQ070XZ01ZP |
| ⚠ IC3801 | I1KJ9A431A | IC | KIA431A-AT or |
| | I0CJ9AILP0 | IC | TL431AILP |
| ⚠ IC3802 | 000220002W | PHOTO COUPLER | PS2561AL1-1-V(W) |
| ⚠ IC3803 | 000220002W | PHOTO COUPLER | PS2561AL1-1-V(W) |
| ⚠ IC3804 | I0BD0159M0 | IC | STR-A6159M |
| ⚠ IC3805 | 000220002W | PHOTO COUPLER | PS2561AL1-1-V(W) |
| ⚠ IC3806 | I1KJ9A431A | IC | KIA431A-AT or |
| | I0CJ9AILP0 | IC | TL431AILP |
| ⚠ IC3807 | I1KA97809A | IC | KIA7809API |
| ⚠ IC3809 | I1KA78R050 | IC | KIA278R05PI |
| ⚠ IC3810 | I1KA9R05A0 | IC | KIA78R05API |
| IC4200 | I01F05853B | IC | AN15853B-E1 |
| IC4201 | I0UF015010 | IC | MM1501XNRE |
| IC6200 | I03S072100 | IC | LA7210 |
| | | **TRANSISTORS** | |
| Q001 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S or |
| | TCAA3875SY | TRANSISTOR,SILICON | KTC3875S_Y_RTK |
| Q002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S or |
| | TCAA3875SY | TRANSISTOR,SILICON | KTC3875S_Y_RTK |
| Q003 | T6YJ1037K0 | TRANSISTOR,SILICON | 2SA1037AKT146R,S or |
| | TAAA1504SY | TRANSISTOR,SILICON | KTA1504S_Y_RTK |
| Q101 | TNYJJ05001 | COMPOUND TRANSISTOR | DTC114TKAT146 |
| Q102 | TCAA3875SY | TRANSISTOR,SILICON | KTC3875S_Y_RTK |
| Q103 | TAAA1504SY | TRANSISTOR,SILICON | KTA1504S_Y_RTK |
| Q301 | T93A018020 | TRANSISTOR,SILICON | 2SD1802S/T-TL-E |
| Q302 | T93A018020 | TRANSISTOR,SILICON | 2SD1802S/T-TL-E |
| Q304 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S or |
| | TCAA3875SY | TRANSISTOR,SILICON | KTC3875S_Y_RTK |
| Q2201 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S or |
| | TCAA3875SY | TRANSISTOR,SILICON | KTC3875S_Y_RTK |
| Q3801 | TCATC31980 | TRANSISTOR,SILICON | KTC3198-AT(Y,GR) |

# ELECTRICAL REPLACEMENT PARTS LIST

| REF. NO. | PART NO. | DESCRIPTION | |
|---|---|---|---|
| **TRANSISTORS** | | | |
| Q3802 | TCATC31980 | TRANSISTOR,SILICON | KTC3198-AT(Y,GR) |
| ⚠ Q3803 | T410K26470 | FET | 2SK2647-01MR |
| ⚠ Q3804 | T41F026510 | TRANSISTOR,FIELD EFF | ECT 2SK2651-01MR |
| ⚠ Q3805 | TCAT032034 | TRANSISTOR,SILICON | KTC3203_Y-AT |
| ⚠ Q3806 | TCAT032034 | TRANSISTOR,SILICON | KTC3203_Y-AT |
| Q3807 | TNAAB05003 | COMPOUND TRANSISTOR | KRC102SRTK |
| Q3808 | T6YJ1037K0 | TRANSISTOR,SILICON | 2SA1037AKT146R,S or |
| | TAAA1504SY | TRANSISTOR,SILICON | KTA1504S_Y_RTK |
| Q3811 | TAATA12660 | TRANSISTOR,SILICON | KTA1266-AT(Y,GR) |
| ⚠ Q3812 | TCAT032034 | TRANSISTOR,SILICON | KTC3203_Y-AT |
| Q4200 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S or |
| | TCAA3875SY | TRANSISTOR,SILICON | KTC3875S_Y_RTK |
| Q4201 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S or |
| | TCAA3875SY | TRANSISTOR,SILICON | KTC3875S_Y_RTK |
| Q4202 | T27T030180 | FET | 2SK3018T106 |
| Q4203 | T27T030180 | FET | 2SK3018T106 |
| Q4204 | T6YJ1037K0 | TRANSISTOR,SILICON | 2SA1037AKT146R,S or |
| | TAAA1504SY | TRANSISTOR,SILICON | KTA1504S_Y_RTK |
| Q4205 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q4206 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q4207 | T6YJ1037K0 | TRANSISTOR,SILICON | 2SA1037AKT146R,S or |
| | TAAA1504SY | TRANSISTOR,SILICON | KTA1504S_Y_RTK |
| Q4208 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q4209 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q4211 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S or |
| | TCAA3875SY | TRANSISTOR,SILICON | KTC3875S_Y_RTK |
| Q4213 | TCAA3875SY | TRANSISTOR,SILICON | KTC3875S_Y_RTK |
| Q4214 | TNYJB05001 | COMPOUND TRANSISTOR | DTC114EKAT146 |
| Q4215 | TAAA1504SY | TRANSISTOR,SILICON | KTA1504S_Y_RTK |
| Q4301 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S or |
| | TCAA3875SY | TRANSISTOR,SILICON | KTC3875S_Y_RTK |
| Q4304 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S or |
| | TCAA3875SY | TRANSISTOR,SILICON | KTC3875S_Y_RTK |
| Q6200 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S or |
| | TCAA3875SY | TRANSISTOR,SILICON | KTC3875S_Y_RTK |
| **COILS &TRANSFORMERS** | | | |
| L001 | 02167F100J | COIL | 10 UH |
| L002 | 02167F150J | COIL | 15 UH |
| L101 | 0216S4220J | COIL | 22 UH |
| L103 | 0216S4220J | COIL | 22 UH |
| L104 | 0216S4220J | COIL | 22 UH |
| L301 | 021LA61R2K | COIL | 1.2 UH |
| L302 | 02A6B2E0A1 | CORE,FERRITE | HF70T22*10*14 |
| L304 | 021404221M | COIL | 21A 220 UH |
| L305 | 021404221M | COIL | 21A 220 UH |
| L605 | 0216S4220J | COIL | 22 UH |
| L612 | 0216SD270J | COIL | 27 UH |
| L613 | 0216SD100J | COIL | 10 UH |
| L614 | 0216SD100J | COIL | 10 UH |
| L804 | 0216S4470J | COIL | 47 UH |
| L805 | 0216S4470J | COIL | 47 UH |
| L806 | 0216S4470J | COIL | 47 UH |
| L901 | 02167F100J | COIL | 10 UH |
| L902 | 02167F100J | COIL | 10 UH |
| L905 | 02167F100J | COIL | 10 UH |
| ⚠ L3800 | 02D1000071 | COIL,CHOKE | ETQR42T029B |
| L3801 | 02167E220K | COIL | R7 22 UH |
| ⚠ L3802 | 029X000121 | COIL,LINE FILTER | SS24H-K08240-CH |
| L3803 | 02167E220K | COIL | R7 22 UH |
| L3804 | 02167E100K | COIL | R6-1 10 UH |
| ⚠ L3805 | 029X000121 | COIL,LINE FILTER | SS24H-K08240-CH |
| L3806 | 02167E100K | COIL | R6-1 10 UH |
| L3807 | 02167E220K | COIL | R7 22 UH |
| L3808 | 021LA6101J | COIL | 100 UH |
| L3809 | 02A6B2E0A1 | CORE,FERRITE | HF70T22*10*14 |
| L3810 | 02A6B2E0A1 | CORE,FERRITE | HF70T22*10*14 |
| L4203 | 02167F100J | COIL | 10 UH |
| L4204 | 021LA6220J | COIL | 22 UH |
| L4205 | 021LA6220J | COIL | 22 UH |
| L4208 | 021LA6220J | COIL | 22 UH |
| L4209 | 021LA6220J | COIL | 22 UH |
| L4212 | 02167F100J | COIL | 10 UH |
| L4213 | 02167F470J | COIL | 47 UH |
| L4214 | 02167F470J | COIL | 47 UH |
| L4218 | 02167F100J | COIL | 10 UH |
| L4219 | 021LA63R9K | COIL | 3.9 UH |
| L6200 | 02167F101J | COIL | 100 UH |

| REF. NO. | PART NO. | DESCRIPTION | |
|---|---|---|---|
| **COILS &TRANSFORMERS** | | | |
| ⚠ T3801 | 0481140014 | TRANSFORMER,SWITCHING | 81140014 |
| ⚠ T3802 | 0481350904 | TRANSFORMER,SWITCHING | 81350904 |
| ⚠ T3803 | 048134005S | TRANSFORMER,SWITCHING | 8134005S |
| **JACKS** | | | |
| J301 | 0602131008 | HEADPHONE JACK | HSJ0913-01-140 |
| J4201 | 063G100060 | SOCKET,21PIN | 035_0_9991_00 |
| J4202 | 063G100060 | SOCKET,21PIN | 035_0_9991_00 |
| J4203 | 060J421030 | RCA JACK | MTJ-032-05A-31-FE |
| J4204 | 060J421037 | RCA JACK | MTJ-032-05A-32-FE |
| J4205 | 060J421036 | RCA JACK | MTJ-032-05A-30-FE |
| J4302 | 060J421037 | RCA JACK | MTJ-032-05A-32-FE |
| J4303 | 060J421030 | RCA JACK | MTJ-032-05A-31-FE |
| **SWITCHES** | | | |
| SW2201 | 0504101T34 | SWITCH,TACT | EVQ21505R |
| SW2202 | 0504101T34 | SWITCH,TACT | EVQ21505R |
| SW2203 | 0504101T34 | SWITCH,TACT | EVQ21505R |
| SW2204 | 0504101T34 | SWITCH,TACT | EVQ21505R |
| SW2206 | 0504101T34 | SWITCH,TACT | EVQ21505R |
| SW2208 | 0504101T34 | SWITCH,TACT | EVQ21505R |
| SW2209 | 0504101T34 | SWITCH,TACT | EVQ21505R |
| **P.C.BOARD ASSEMBLIES** | | | |
| PCB270 | A3R802A270 | PCB ASS'Y | TEDB78A |
| PCB340 | A3R802A340 | PCB ASS'Y | TEDB83A |
| PCBD00 | A3R802AD00 | PCB ASS'Y | TEDB80A |
| PCBD20 | A3R802AD20 | PCB ASS'Y | TMD617A |
| PCBDA0 | A3R802ADA0 | PCB ASS'Y | TEDB79A |
| PCBDQ0 | A3R802ADQ0 | PCB ASS'Y | TEDB82A |
| **MISCELLANEOUS** | | | |
| B301 | 024HT03564 | CORE,BEADS | W4BRH3.5X6X1.0 |
| B302 | 024HT03563 | CORE,BEADS | W4BRH3.5X6X1.0X2 |
| B303 | 024HT03563 | CORE,BEADS | W4BRH3.5X6X1.0X2 |
| B601 | 024HC36001 | CORE,BEADS | HCB2012K-600T25 |
| B602 | 024HC36001 | CORE,BEADS | HCB2012K-600T25 |
| B603 | 024HC36001 | CORE,BEADS | HCB2012K-600T25 |
| B806 | 024HC36001 | CORE,BEADS | HCB2012K-600T25 |
| B3801 | 024HT03564 | CORE,BEADS | W4BRH3.5X6X1.0 |
| B4302 | 024HC36001 | CORE,BEADS | HCB2012K-600T25 |
| B4303 | 024HC36001 | CORE,BEADS | HCB2012K-600T25 |
| B4304 | 024HC36001 | CORE,BEADS | HCB2012K-600T25 |
| BT001 | 1412004008 | BATTERY,MANGAN | R03(AB)E_2P_G |
| BT002 | 1412004008 | BATTERY,MANGAN | R03(AB)E_2P_G |
| CD301 | 06C3145704 | CORD,CONNECTOR | C3145704 |
| CD503 | 06CU2E5601 | CORD,CONNECTOR | CU2E5601 |
| CD803 | 06CHRU2202 | CORD,CONNECTOR | CHRU2202 |
| CD805 | 122H0U0801 | CORD,JUMPER | 2H0U0801 |
| CD806 | 122H0R0801 | CORD,JUMPER | 2H0R0801 |
| CP101 | 069S270629 | CONNECTOR PCB SIDE | A2001WV2-7P |
| CP102 | 069S250629 | CONNECTOR PCB SIDE | A2001WV2-5P |
| CP301 | 069S140439 | CONNECTOR PCB SIDE | A2502WR2-4P |
| CP801 | 069HVWT04A | CONNECTOR PCB SIDE | FI-X30S-HF-NPB |
| CP805 | 069EVU3010 | CONNECTOR PCB SIDE | 00_6232_030_006_800 |
| CP806 | 069EVR3010 | CONNECTOR PCB SIDE | 00_6232_027_006_8 |
| CD2200 | 06CU231801 | CORD,CONNECTOR | CU231801 |
| CD2201 | 06C3244502 | CORD,CONNECTOR | C3244502 |
| CD3800 | 06CUU24302 | CORD,CONNECTOR | CUU24302 |
| ⚠ CD3801 | 120G058801 | CORD,AC | 0G058801 |
| CD3804 | 06C3011204 | CORD,CONNECTOR | C3011204 |
| CD3807 | 06C32A3104 | CORD,CONNECTOR | C32A3104 |
| CP2200 | 069S230629 | CONNECTOR PCB SIDE | A2001WV2-3P |
| CP2201 | 069S240629 | CONNECTOR PCB SIDE | A2001WV2-4P |
| CP3800 | 069S320419 | CONNECTOR PCB SIDE | A3963WV2-3PD |
| CP3801 | 069S2E0629 | CONNECTOR PCB SIDE | A2001WV2-14P |
| ⚠ CP3803 | 064J1A0004 | SOCKET,AC | AC-015-3P(O87) |
| CP3804 | 069S2A0629 | CONNECTOR PCB SIDE | A2001WV2-10P |
| CP3807 | 069S2A0629 | CONNECTOR PCB SIDE | A2001WV2-10P |
| CP3811 | 069J130260 | CONNECTOR PCB SIDE | 6035B-03Z002-T |
| CP4201 | 069EVR3010 | CONNECTOR PCB SIDE | 00_6232_027_006_8 |
| CP4202 | 069EVU3010 | CONNECTOR PCB SIDE | 00_6232_030_006_800 |
| CP4301 | 0694S15016 | CONNECTOR PCB SIDE | 1-788624-1 |
| CUSD21 | 800WFAA006 | CUSHION A | |
| ELD201 | 124116281A | EYE LET | XRY16X28BD |
| ELD202 | 124120301A | EYE LET | XRY20X30BD |
| ⚠ F3801 | 080NT05004 | FUSE | 50T050H |
| FH3801 | 06710T0009 | HOLDER,FUSE | EYF-52BCY |
| FH3802 | 06710T0009 | HOLDER,FUSE | EYF-52BCY |
| NR601 | 110P4101M4 | R,NETWORK | 4D03WGJ0101T5E |
| NR602 | 110P4101M4 | R,NETWORK | 4D03WGJ0101T5E |

# ELECTRICAL REPLACEMENT PARTS LIST

| REF. NO. | PART NO. | DESCRIPTION | | |
|---|---|---|---|---|
| | | **MISCELLANEOUS** | | |
| NR603 | 110P4101M4 | R,NETWORK | 4D03WGJ0101T5E | |
| NR604 | 110P4101M4 | R,NETWORK | 4D03WGJ0101T5E | |
| NR605 | 110P4101M4 | R,NETWORK | 4D03WGJ0101T5E | |
| NR606 | 110P4101M4 | R,NETWORK | 4D03WGJ0101T5E | |
| NR607 | 110P4101M4 | R,NETWORK | 4D03WGJ0101T5E | |
| NR801 | 110P4220M4 | R,NETWORK | 4D03WGJ0220T5E | or |
| | 110N4220M3 | R,NETWORK | CAY16-220-J-4R | |
| NR802 | 110P4220M4 | R,NETWORK | 4D03WGJ0220T5E | or |
| | 110N4220M3 | R,NETWORK | CAY16-220-J-4R | |
| NR803 | 110P4220M4 | R,NETWORK | 4D03WGJ0220T5E | or |
| | 110N4220M3 | R,NETWORK | CAY16-220-J-4R | |
| NR804 | 110P4220M4 | R,NETWORK | 4D03WGJ0220T5E | or |
| | 110N4220M3 | R,NETWORK | CAY16-220-J-4R | |
| NR805 | 110P4220M4 | R,NETWORK | 4D03WGJ0220T5E | or |
| | 110N4220M3 | R,NETWORK | CAY16-220-J-4R | |
| NR806 | 110P4220M4 | R,NETWORK | 4D03WGJ0220T5E | or |
| | 110N4220M3 | R,NETWORK | CAY16-220-J-4R | |
| NR807 | 110P4220M4 | R,NETWORK | 4D03WGJ0220T5E | or |
| | 110N4220M3 | R,NETWORK | CAY16-220-J-4R | |
| NR808 | 110P4220M4 | R,NETWORK | 4D03WGJ0220T5E | or |
| | 110N4220M3 | R,NETWORK | CAY16-220-J-4R | |
| NR809 | 110P4220M4 | R,NETWORK | 4D03WGJ0220T5E | or |
| | 110N4220M3 | R,NETWORK | CAY16-220-J-4R | |
| NR810 | 110P4220M4 | R,NETWORK | 4D03WGJ0220T5E | or |
| | 110N4220M3 | R,NETWORK | CAY16-220-J-4R | |
| NR811 | 110P4220M4 | R,NETWORK | 4D03WGJ0220T5E | or |
| | 110N4220M3 | R,NETWORK | CAY16-220-J-4R | |
| NR812 | 110P4220M4 | R,NETWORK | 4D03WGJ0220T5E | or |
| | 110N4220M3 | R,NETWORK | CAY16-220-J-4R | |
| NR813 | 110P4220M4 | R,NETWORK | 4D03WGJ0220T5E | or |
| | 110N4220M3 | R,NETWORK | CAY16-220-J-4R | |
| NR814 | 110P4220M4 | R,NETWORK | 4D03WGJ0220T5E | or |
| | 110N4220M3 | R,NETWORK | CAY16-220-J-4R | |
| NR815 | 110P4220M4 | R,NETWORK | 4D03WGJ0220T5E | or |
| | 110N4220M3 | R,NETWORK | CAY16-220-J-4R | |
| NR816 | 110N4101M3 | R,NETWORK | CAY16-101-J-4R | |
| NR817 | 110N4101M3 | R,NETWORK | CAY16-101-J-4R | |
| NR818 | 110N4101M3 | R,NETWORK | CAY16-101-J-4R | |
| NR819 | 110N4101M3 | R,NETWORK | CAY16-101-J-4R | |
| NR820 | 110N4101M3 | R,NETWORK | CAY16-101-J-4R | |
| NR821 | 110N4101M3 | R,NETWORK | CAY16-101-J-4R | |
| NR824 | 110N4101M3 | R,NETWORK | CAY16-101-J-4R | |
| NR825 | 110N4101M3 | R,NETWORK | CAY16-101-J-4R | |
| NR826 | 110N4101M3 | R,NETWORK | CAY16-101-J-4R | |
| NR827 | 110P4220M4 | R,NETWORK | 4D03WGJ0220T5E | or |
| | 110N4220M3 | R,NETWORK | CAY16-220-J-4R | |
| OS2201 | 0779000026 | REMOTE RECEIVER | GP1UM261XK0F | |
| ⚠ RY3801 | 0560V50118 | RELAY | ALKS329 | |
| SP301 | 070C546009 | SPEAKER | SG04H02CRA | |
| SP302 | 070C546009 | SPEAKER | SG04H02CRA | |
| TM101 | 076N0GE060 | TRANSMITTER | RC-GE060 | |
| TR801 | 02A6B2E0A1 | CORE,FERRITE | HF70T22*10*14 | |
| TR802 | 02A6B2E0A1 | CORE,FERRITE | HF70T22*10*14 | |
| ⚠ TU001 | 0163K17004 | RF UNIT | TCPQ9091PD27E(J) | |
| TR3801 | 02AHA896A1 | CORE,FERRITE | W5T18.4X10X9.6 | |
| TR3803 | 02A6B2E0A1 | CORE,FERRITE | HF70T22*10*14 | |
| ⚠ V2301 | 09EV123001 | LCD | V230W1-L02 | |
| X101 | 100DT01407 | CRYSTAL | SMD-49 | |
| X601 | 100DT02713 | CRYSTAL | SMD-49 | |
| X901 | 100CT01803 | CRYSTAL | HC-49/U-S | |
| X6200 | 1002A0R503 | CERAMIC OSCILLATOR | CSB500E5 | |

RESISTOR

RC..... CARBON RESISTOR

CAPACITORS

CC..... CERAMIC CAPACITOR
CE..... ALUMI ELECTROLYTIC CAPACITOR
CP..... POLYESTER CAPACITOR
CPP..... POLYPROPYLENE CAPACITOR
CPL..... PLASTIC CAPACITOR
CMP..... METAL POLYESTER CAPACITOR
CMPL..... METAL PLASTIC CAPACITOR
CMPP..... METAL POLYPROPYLENE CAPACITOR

| | |
|---|---|
| SPEC.NO. | M3R8-02A |
| O/R NO. | W513549 |

# ORION

# TV-2322 SI

# SERVICE MANUAL

## COLOR TELEVISION RECEIVER

**REVISION 1**
**CHASSIS CODE B**

| CHASSIS CODE | V2301 |
|---|---|
| A | V230W1-L02 (09EV123001) |
| B | V230W1-L02 (09EV123002) |

Please file the revision with the original version.

## Change of LCD PANEL

# ELECTRICAL REPLACEMENT PARTS LIST

| REF. NO. | CHASSIS CODE A | | CHASSIS CODE B | |
|---|---|---|---|---|
| | PART NO. | DESCRIPTION | PART NO. | DESCRIPTION |
| ⚠ V2301 | 09EV123001 | LCD V230W1-L02 | 09EV123002 | LCD V230W1-L02 |

# ELECTRICAL ADJUSTMENTS

## 2-1: CONTRAST CENT

1. Receive the PAL color bar pattern. (RF Input)
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(20)** on the remote control to select "CON CENT".
3. Check if the step No. CONT CENT is "84".
4. Receive a broadcast and check if the picture is normal.
5. Press the AV button on the remote control to set to the AV mode. Then perform the above adjust 1~3.

## 2-3: Confirmation of Fixed Value (step No.)

Please check if the fixed values of the each adjustment items are set correctly referring below.**(RF/AV/PC)**

| NO. | FUNCTION | RF | AV | PC |
|---|---|---|---|---|
| 01 | R DRIVE | 592 | 592 | 608 |
| 02 | R CUT OFF | 32 | 32 | 0 |
| 04 | G CUT OFF | 32 | 32 | 0 |
| 05 | B DRIVE | 512 | 512 | 496 |
| 06 | B CUT OFF | 12 | 12 | 0 |
| 15 | BRIGHT CENT | 7 | 7 | 145 |
| 18 | TINT | 2 | 2 | 0 |
| 20 | CONT CENT | 84 | 84 | 40 |
| 37 | RGB CONT CENT | 20 | 20 | 20 |

| SPEC.NO. | M3R8-03A |
| --- | --- |
| O/R NO. | U563523 |